AN ARCHAEOLOGICAL SURVEY FOR THE WOODROW-OSCEOLA WATER SUPPLY CORPORATION WATER SYSTEM IMPROVEMENTS PROJECT IN HILL COUNTY TEXAS

Antiquities Permit 3888

By
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Brazos Valley Research Associates
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AN ARCHAEOLOGICAL SURVEY FOR THE WOODROW-OSCEOLA WATER SUPPLY CORPORATION WATER SYSTEM IMPROVEMENTS PROJECT IN HILL COUNTY, TEXAS

BVRA Project 05-12

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ABSTRACT

An archaeological survey of 15 high probability areas was conducted by Brazos Valley Research Associates (BVRA) in Hill County, Texas in August and September of 2005 under Antiquities Permit 3888 for the Woodrow-Osceola Water Supply Corporation (WSC). In all, 69 acres were examined, and no archaeological sites were found to be within any of the 15 areas. The Jawbone Cemetery and Blanton Cemetery are near the project area, but they will not be affected. It is recommended that construction of the water line be allowed to proceed in the rest of the project area without further consultation from the Texas Historical Commission. No artifacts were collected.

ACKNOWLEDGMENTS

The authors are grateful to those individuals who participated in this project. At the Woodrow-Osceola WSC we were assisted by David Tomlinson (General Manager) and Charlie Allmon (Service Tech). Ben Shanklin, P.E. of Childress Engineers & Consultants, Inc. of Cleburne, Texas provided maps and other information necessary to complete this investigation. Jean Hughes at the Texas Archeological Research Laboratory (TARL) in Austin, Texas checked the site records for previously recorded archaeological sites in or near the project area. The drafted figures were prepared by Lili G. Lyddon of LL Technical Services, and Jennifer McMillan provided technical support.

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INTRODUCTION

The Woodrow-Osceola WSC is applying for funds from the United States Department of Agriculture, Rural Development to improve its water distribution system by adding new line and a deep well and pump station in central Hill County, Texas (Figure 1). The fifteen segments of the water line and the site of a deep well and pump station were selected as high probability areas for survey. This selection was based on proximity to creeks as depicted on four 7.5' topographic quadrangles and a field assessment. The topographic quadrangles are Blanton (3297-121), dated 1966 and current as of 1976; Covington (3297-124), dated 1976 and current as of 1978; Hillsboro West (3297-112), dated 1966 and current as of 1976; and Itasca (3297-113), dated 1965. The project area is depicted in Figure 2.

The water line will be routed along state highways, county roads, and farm-to-market roads and will be placed on private property within five feet of existing line. New line will only be installed in Area 10. The pipe will be placed in a trench two feet wide and between three and four feet deep. No water line will be routed through a cemetery, marked graves, or burial plots. When necessary, the water line will be routed through the highway right-of-way if adjacent to a cemetery or on the side of the highway opposite a cemetery.

An archaeological survey was requested in a letter from the State Historic Preservation Officer (Texas Historical Commission) to Becky J. Richards, P.G. of ETI dated April 22, 2004. The Woodrow-Osceola WSC retained Brazos Valley Research Associates to perform this service.

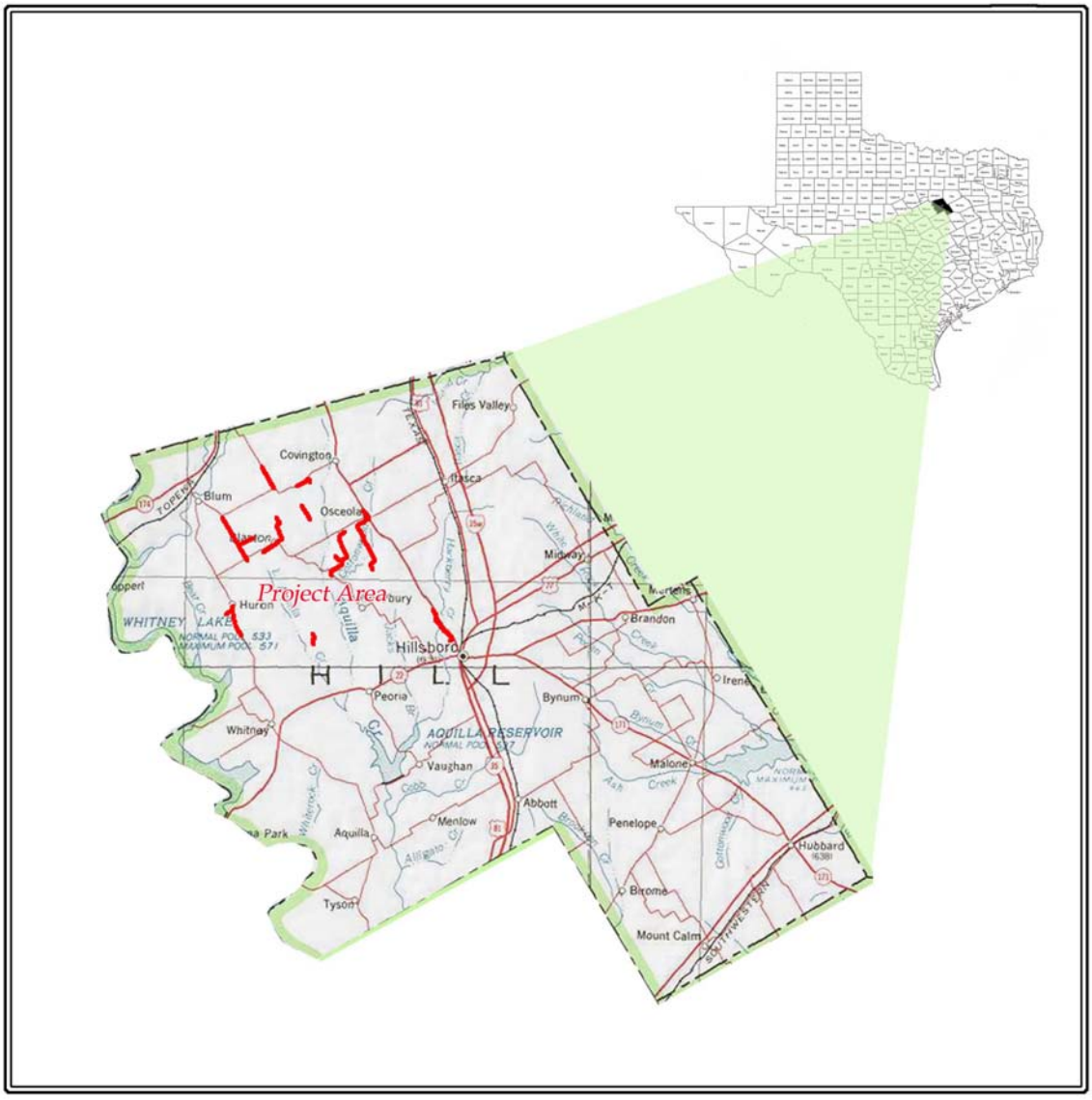


Figure 1. General Location

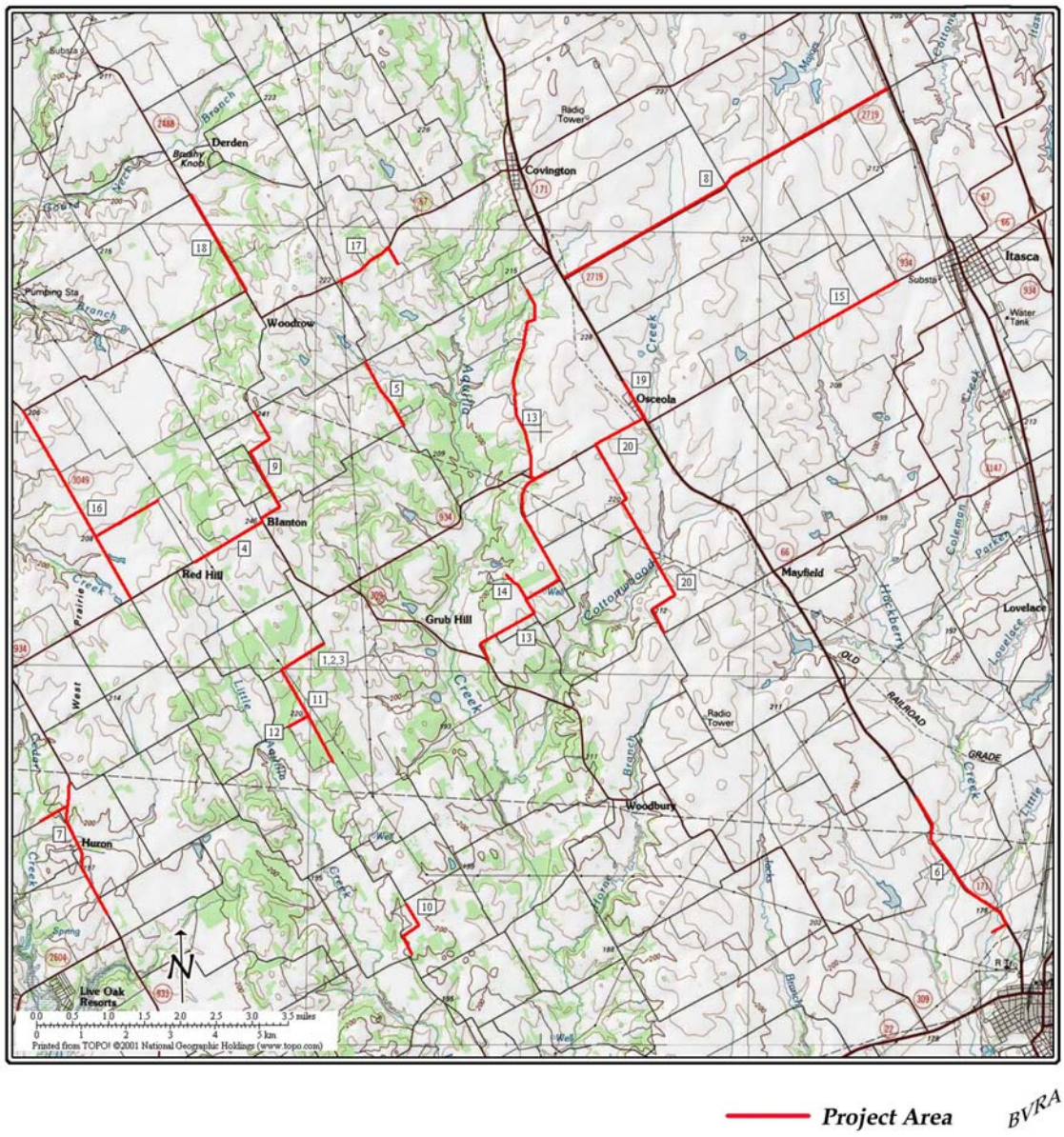


Figure 2. Project Area

ENVIRONMENTAL SETTING

The following information was taken from the soil survey for Hill County (Brooks 1978). Hill County is located within three land resource areas in north-central Texas. These are the Blackland Prairie, Grand Prairie, and East Cross Timbers. It is bounded on the north by Johnson County, on the south by Limestone and McLennan counties, on the east by Ellis and Navarro counties, and on the west by Lake Whitney and the Brazos River. The county is 657,920 acres in size, and elevation ranges from about 400 to 900 feet above sea level. The area is nearly level to rolling and well dissected by natural streams. About 46 percent of the area is used for general field crops. Thirty-two percent is in pasture, 13 percent is rangeland, 6 percent is urban land and water, and woods account for 3 percent. Most of the rangeland is in the northwestern part of the county within the Grand Prairie Land Resource Area.

The soils of Hill County formed under a cover of tall grasses. Most of the soils are dark and clayey and crack severely when dry. Water erosion is a major conservation problem. Soil is the most important natural resource in Hill County. The soils formed mainly from limestone and marl and have high natural fertility. They produce good crops and pasture, which support strong, healthy livestock. The main limestone formations in the county are the Austin Chalk that crops out in the center of the county, and part of the Washita Group which crops out in the northwestern part of the county. The Woodbine, Eagle Foard, and Ozan formations consist of soft sandstone, shale, and marl and underlie most of the county. According to the General Soil Map for Hill County, the project area is located within deep to moderately deep clayey prairie soils and deep sandy and loamy savannah soils. The prairie soils are known as Houston Black-Heiden-Altoga. These are deep, nearly level to gently sloping, moderately alkaline clayey soils. The savannah soils are known as Tinn-Pursley. These are deep, nearly level, moderately alkaline loamy and clayey soils.

An overview of the geology of the Aquilla Creek watershed was prepared by Ronald Ritchie and Bob H. Slaughter (1972). Their work is presented as an appendix to the 1972 report assembled by S. Alan Skinner. A botanical summary of the Aquilla Creek watershed was prepared by Jerry M. Flook (1972). His work is presented as an appendix to the 1972 report assembled by S. Alan Skinner. An overview of the zoological resources of the Aquilla Creek watershed was prepared by John E. Ubelaker and N. Max Hall (1972). Their work is presented as an appendix to the 1972 report assembled by S. Alan Skinner.

ARCHAEOLOGICAL BACKGROUND

The project area is located in a region referred to by Biesaart et al. (1985) in a statistical overview as the North Central Texas cultural geographical region. In 1985, when the overview was published, this region contained 2678 recorded archaeological sites (13.25% of the state). In Hill County, there were 242 known prehistoric sites as of 1985. These sites are classified as Paleoindian (n=11), Early Archaic (n=2), Middle Archaic (n=13), Late Archaic (n=58), General Archaic (n=28), and Late Prehistoric (n=50). Today, five prehistoric sites (41HI1, 41HI17, 41HI41, 41HI53, and 41HI55) are listed in the National Register of Historic Places. Two historic sites (Hill County Courthouse and Hill County Jail) and the Hillsboro Multiple Resource Group (various historic buildings) are also listed in the National Register of Historic Places. The Aquilla Reservoir Multiple Resource Area (126 prehistoric sites and 81 historic sites) has been determined to be eligible for listing in the National Register of Historic Places. State Archeological Landmark status has been given to the Hill County Courthouse and the Katy Depot (Missouri-Kansas-Texas Company Railroad Station).

Archaeological sites in the county have been disturbed through erosion, construction, and vandalism. Sites are described in the overview as deflated, dispersed, surface collected, and destroyed. Only one site is referred to as pristine. In 1985, the number of excavated sites was 10. Sixty-three sites had been tested by hand, and two sites had been tested by machine. The number of surface collected sites is large at 222. Today, there are at least 290 recorded sites in Hill County. No figures exist regarding the number of sites that have been disturbed and/or tested and excavated. The overview describes subsistence-related features at prehistoric sites in Hill County as hearths, burned rock features, and pits. Ten sites were reported to contain burials. Technology-related features include stone quarries, caches, shell and stone tool manufacturing areas. The overview does not give site numbers.

Archaeological survey and testing projects have been conducted by various contract firms and universities throughout Hill County. The nearest major study for this area was performed in the Aquilla Creek watershed to the west of the project area. Most of this work was performed by archaeologists from Southern Methodist University (SMU) and the Texas Archeological Survey (TAS). TARL records revealed that the earliest work at Aquilla Creek watershed was conducted by SMU in 1972 (Skinner 1972). This study was concentrated along Aquilla Creek and Hackberry Creek, and investigated 3280 acres. In all, 125 prehistoric sites (41HI31 – 41HI155) were recorded. Sites were found in various topographic settings such as edges of creeks, floodplains, floodplain rises, upland bases, uplands slopes, and uplands. No historic sites are mentioned in the report, but there is a summary of the history of the watershed. An interim report (Skinner 1975) was submitted to the Soil Conservation Service in 1975.

This study revealed that the major period of occupation in the project area was during the Archaic period of Texas prehistory. Some evidence was found to suggest earlier habitation of the area, circa 8000 B.C. – A.D. 1500. No historic Indian sites were found. Analysis of the settlement patterns and the artifact assemblages suggests that the sites represent short-term campsites at which similar activities were carried out (Skinner 1972:56). These activities include tool manufacture, mussel shell gathering, and hunting. To a lesser extent, quarrying and processing of plant foods were performed. A paucity of ground stone tool fragments (especially manos and metates) was interpreted by the researchers as evidence that plant food processing was not an important activity. Skinner mentions, for example, that sites along Brazos River alluvial terraces often yield large numbers of ground stone tools. These sites are referred to as base camps, and they are larger in area than those in the Aquilla Creek watershed. Skinner hypothesizes that the small size of the sites along Aquilla Creek and Hackberry Creek and the scarcity of cultural remains suggests that occupation of the watershed was for short periods of time and seasonal. The presence of temporally different projectile points at one location is viewed as evidence for re-occupation of suitable camp locations.

In 1975, SMU returned to the area and completed the survey of the proposed reservoir initiated in 1972 (Lynott and Peter 1977). In addition to survey, test excavations were conducted at 22 sites. In all, 68 new sites were recorded. Site types include campsites, lithic scatters, quarries and workshops, and shell middens. These sites date to the Archaic and Woodland/Early Ceramic periods of Texas prehistory. The report by Lynott and Peter contains a very thorough review of the area.

Archaeologists from SMU returned to Aquilla Lake in 1977 (Skinner et al. 1978) and continued to test sites found during the survey. The purpose of this study was to assess sites in the project area for their eligibility for listing in the National Register of Historic Places and to evaluate various archaeological problems relevant to the project area. This investigation found that sites in the project area date from Paleoindian times to the Late Prehistoric. Not one of the sites tested yielded datable organic remains. The authors recommended that single component sites be identified and tested in order to refine the local chronology and to provide meaningful study units.

More testing was carried out by SMU in 1978 (Skinner et al. 1979). Testing at seven sites allowed the researchers to make comparisons of sites from the southern two-thirds of the Central Brazos River Basin with those at Aquilla Lake. It was learned that significant changes in settlement patterns in time and space took place. Site types include a burned rock midden, campsite, lithic scatter, and a shell midden. The site numbers in the report were assigned by SMU. In this report, TARL numbers are used. They are 41HI58, 41HI122, 41HI123, 41HI124, 41HI139, 41HI144, and 41HI167.

In 1982, Richard Paul Watson submitted his dissertation to the Graduate School at The University of Texas at Austin under the title *The Archeology of Aquilla Reservoir: Implications for a Regional Research Design for the Central Brazos River Basin, Texas.* The purpose of his study was describe and discuss the research undertaken in the Aquilla Creek watershed in 1979 and 1980, to propose a regional research design for the entire Central Brazos River region, and to analyze evidence from investigations at sites in the Aquilla watershed in terms of the proposed regional perspective. His research is based on data from sites 41HI74, 41HI76, 41HI77, 41HI104, and 41HI105.

In his conclusions Watson states that a direct continuity of the Paleoindian and Archaic adaptations has been proposed, and the utility of the Paleoindian Stage as a heuristic concept has been questioned for use in the Central Brazos River region. In addition, he presents a significant re-adaptation from the exploitation of bison during the Late Archaic sub-stage to the exploitation of deer during Late Prehistoric times in order to explain the dramatically different assemblages and settlement patterns apparent during these stages. Finally, he proposes a social interaction hypothesis involving inter-group marriage between native Central Brazos River groups and the East Texas Caddo to explain the presence of Caddoan style ceramics in the Central Brazos region.

In 1987, the David O. Brown (1987) reported the results of the final three seasons of work at Aquilla Lake for the Texas Archeological Survey. His work is presented in three volumes. This is a very detailed overview of the archaeology of the Aquilla Creek watershed and vicinity. Topics discussed include a summary of environment, previous research, local history, data collection, site types, culture history, and conclusions. This source is recommended for those with an interest in the archaeology of Central Texas.

Between 1998 and 1999, archaeologists from Prewitt and Associates, Inc. conducted an archaeological survey and geo-archaeological assessment of approximately 31 miles of water pipeline right-of-way from Aquilla Lake to Lake Pat Cleburne in northwestern Hill County and south-central Johnson County (Arnn and Gadus 1999). Seven new sites were found and recorded, and one previously recorded site was revisited. Hill County sites discussed in this report are 41HI279 – 41HI283. Site 41HI280 was recommended as potentially eligible for listing on the National Register of Historic Places and designation as a State Archeological Landmark. It is in a depositional setting and has buried cultural materials that may represent a discrete, isolable component.

There are several sources that are relevant to this study, but they are not directly related. The interested reader is referred to Appendix I for a list of suggesting readings.

METHODS

Prior to entering the field, the site records at the Texas Archeological Research Laboratory on the campus of The University of Texas at Austin were checked for the presence of previously recorded archaeological sites in the project area and vicinity. In addition, a review of the existing literature for Hill County was conducted. This background work resulted in the identification of 15 high probability areas to be investigated. An additional two areas across from known cemeteries were also noted. A 100% Pedestrian Survey with shovel testing was conducted in August and September of 2005. This survey was based on a Research Design that was submitted to the Texas Historical Design, Archeology Division during the planning stages of this project (Appendix II). When possible, eroded and otherwise exposed areas within the various rights-of-way were examined for surface indications of prehistoric and historic sites in each of the high probability areas.

The subsurface was examined through 79 shovel tests in 15 areas. No additional areas worthy of survey were noted. Each shovel test was recorded on a shovel test log (Appendix III) and discussed in the project notes. Locations of shovel tests are depicted on drafted maps in the *Discussion of Areas Surveyed* section below. The excavated matrix was screened using quarter-inch hardware cloth when possible. In some areas, however, heavy clays made normal screening impossible. The matrix from these tests was examined by manually breaking apart the clay.

During the course of this survey two cemeteries were observed near the route of the proposed water line. These are Jawbone Cemetery and an unnamed cemetery near the community of Blanton. These historic sites are outside the project area; therefore, no site numbers were assigned. They were, however, visited and photographed.

PROJECT AREAS

The proposed project involves twenty areas in various parts of the county. Each area is depicted on the relevant 7.5' USGS topographic quadrangle (Appendix IV), and the areas with approximate locations of shovel tests are depicted on drafted maps (Appendix V).

Area 1-3

These areas are depicted on the Blanton 7.5' quadrangle. This one-acre tract is the proposed location for a deep well and pump station (Area 1), ground storage tank (Area 2), and elevated storage tank (Area 3). It is on the south side of County Road 1446 and is situated on a hill overlooking an intermittent tributary of Little Aquilla Creek 0.35 kilometers to the west. At the time of this survey it was fenced and covered with thick weeds. The entire area was subjected to a 100% Pedestrian Survey, and four negative shovel tests were excavated. The soil in this area is orange sand 20-30 cm deep over orange clay.

Area 4

This area is depicted on the Blanton 7.5' quadrangle. This 6100-foot segment is planned for replacement of an existing 4-inch water line with an 8" water line on the south side of Farm-to-Market Road 934. The new line will be placed approximately 4-5 feet from the existing line on private property within an existing easement of 15 feet. Since there are nearby sources of water, this area was not considered a likely setting for a prehistoric site. Because of the presence of the Blanton Cemetery across the road from Area 4, the area was examined and no graves were observed. The cemetery was fenced and well maintained. The earliest headstone observed was dated 1896. In addition, there were several graves dating to the early 20th century.

Area 5

This area is depicted on the Covington 7.5' quadrangle. This 5500-foot segment is planned for replacement of an existing 1.5-inch water line with an 8" water line on the east side of County Road 1414. The new line will be placed approximately 4-5 feet from the existing line on private property within an existing easement of 15 feet. The only stream crossings are the upper reaches of three unnamed tributaries of Aquilla Creek. At the time of this survey the area was in pasture and scattered trees with little understory, and the soil is a thin layer of clay loam over firm orange clay. The entire area was subjected to a 100% Pedestrian Survey, and eight negative shovel tests were excavated to a maximum depth of 10 cm.

Area 6

This area is depicted on the Hillsboro West 7.5' quadrangle. This 17,500-foot segment is planned for replacement of an existing 2-inch water line with a 6" water line on the west side of State Highway 171 and north side of County Road 1343 West. The new line will be placed approximately 4-5 feet from the existing line on private property within an existing easement of 15 feet. Two segments of Area 6 were examined, and they are described in this report as Survey Area 6A and Survey Area 6B.

Survey Area 6A was on private property at the crossing of a branch of Hackberry Creek. At the time of this survey the area was in a cornfield, pasture, and a yard. The soil survey map indicated that alluvial deposition might be present in part of this area. Therefore, an effort was made to investigate the subsurface to four feet, the maximum depth of the Area of Potential Effect (APE). A deep clay loam was found on the northwestern end of the project area. This area was in a cornfield. Next to it was the right-of-way, which had a wide ditch three to four feet lower than the top of the project area. The clay was very dry and hard. It could only be excavated to about 50 cm before any recent surface moisture was gone. A plan was devised to dig a series of three shovel tests to reach the bottom of the APE. Shovel Test 1 was excavated on the top of the cornfield to 50 cm. Shovel 2 was placed down slope starting about 50 cm lower than the top of Shovel Test 1. It was excavated to 50 cm and terminated as the hard clay prevented further digging. Shovel Test 3 was placed at the bottom of the ditch and excavated to 30 cm where basal clay was encountered. A second area (shovel tests 4-6) was excavated following the same procedure. At Shovel Test 7, the ditch presented a cut bank face 120 cm deep. A profile was cleaned and shovel tested by level. Basal clay was found at 80 cm. Two shovel tests (8 and 9) were excavated at the creek where the alluvial clay was only 40 cm deep over basal clay. Two more shovel tests (10 and 11) were excavated upslope where basal clay was found at shallow depths. The entire area was visually inspected.

Survey Area 6B

The only stream crossing is Little Hackberry Creek. At the time of this survey the area was in a cornfield, pasture, and a yard. The entire area was subjected to a 100% Pedestrian Survey, and five negative shovel tests were excavated to a maximum depth of 60 cm. According to the soil survey map, alluvial deposition may exist in parts of this area. The shovel tests revealed dark gray alluvial clay to a depth of 60 cm. Below this was a yellow clay containing caliche.

Area 7

This area is depicted on the Blanton 7.5' quadrangle. This 13,400-foot segment is planed for replacement of an existing 1.5" water line with a 6" water line. It is on the east side of Farm-to-Market Road 933. Two segments of Area 7 were examined, and they are described in this report as survey areas 7A and 7B.

Survey Area 7A

This area is located on the eastern side of Farm-to-Market Road 933 where a tributary of Cedar Creek crosses the highway. At the time of this survey the area was in wooded pasture and consisted of clay and limestone with some bedded limestone outcrops. The entire area was subjected to a 100% Pedestrian Survey, and seven negative shovel tests were excavated to a maximum depth of 20 cm.

Survey Area 7B

This area is located on the eastern side of Farm-to-Market Road 933 where a tributary of Cedar Creek crosses the highway. At the time of this survey this area was in wooded pasture, and clay and limestone was present at or near the surface. The entire area was subjected to a 100% Pedestrian Survey, and four negative shovel tests were excavated to a maximum depth of 20 cm.

Area 8

This area is depicted on the Itasca 7.5' quadrangle. This 24,000-foot segment is planed for replacement of an existing 2" water line with a 6" water line. It is on the north side of Farm-to-Market Road 2719. The only stream crossings are Cottonwood Creek and a tributary of Island Creek. At the time of this survey most of the area was in cornfields, and surface visibility was excellent. The soil in this area is dark gray prairie clay with no alluvial deposition. Sandstone and caliche gravels were present. The entire area was subjected to a 100% Pedestrian Survey, and five shovel tests were excavated to a maximum depth of 30 cm. No cultural materials were observed.

Area 9

This area is depicted on the Blanton and Covington 7.5' quadrangles. This 11,500-foot segment is planed for replacement of an existing 6" water line with an 8" water line. It is on the south and east sides of County Road 1430. The only stream crossing is an unnamed tributary. This is a low probability area for a prehistoric site. Therefore, no shovel tests were excavated. The entire area was subjected to a 100% Pedestrian Survey, and no structures were observed in the APE.

Area 10

This area is depicted on the Blanton 7.5' quadrangle. This 5500-foot segment is planed for the installation of new 6" water line. It is on the south and east sides of Farm-to-Market Road 3050. There are no stream crossings; however, a portion of the APE is on high ground overlooking an unnamed tributary and Little Aquilla Creek is 0.7 kilometers to the west. At the time of this survey most of the area was in cornfields, and surface visibility was excellent. The soil is dark gray prairie clay with no alluvial deposition, and sandstone and caliche gravels were present. The entire area was subjected to a 100% Pedestrian Survey, and four shovel tests were excavated to a maximum depth of 30 cm. No cultural materials were observed.

Area 11

This area is depicted on the Blanton 7.5' quadrangle. This 10,500-foot segment is planned for replacement of existing 2" and 6" water lines with an 8" line. It is on the south and east sides of County Road 1300. Since this area does not involve any major stream crossings, shovel testing was not considered necessary. Because of the presence of Jawbone Cemetery on the west side of the highway near the intersection of Area 11 and Area 12, a surface inspection was conducted in the area nearest the cemetery and no graves were observed within the APE. At the time of this survey, the cemetery was fenced and well maintained. Dates on the headstones ranged from 1882 to the present.

Area 12

This area is depicted on the Blanton 7.5' quadrangle. This 1600-foot segment is planned for replacement of existing 2" water line with an 8" line. It is on the south side of County Road 1217. The nearest water is Little Aquilla Creek 0.66 kilometers to the west.

Area 13

This area is depicted on the Blanton, Covington, and Itasca 7.5' quadrangles. This 32,000-foot segment is planned for replacement of an existing 1.5" and 2" water lines with an 8" line. It is on the west side of County Road 1450 North and County Road South. Three segments of Area 13 were examined, and they are described in this report as survey areas 13A, 13B, and 13C.

Survey Area 13A

This area crosses an unnamed tributary of Aquilla Creek. At the time of this survey, the area had been cleared and contained scattered trees. The entire area was subjected to a 100% Pedestrian Survey, and seven negative shovel tests were excavated to a maximum depth of 20 cm. Soils in this area consist of orange clay with ironstone fragments and sandstone fragments in some areas. There was no alluvial deposition.

Survey Area 13B

This area crosses an unnamed tributary of Aquilla Creek. At the time of this survey the area was in pasture and contained scattered trees. The entire area was subjected to a 100% Pedestrian Survey, and seven negative shovel tests were excavated to a maximum depth of 20 cm. Soils in this area consist of yellow-orange clay with sandstone fragments. There was no alluvial deposition.

Survey Area 13C

This area crosses an unnamed tributary of Aquilla Creek. At the time of this survey the area was in pasture and contained scattered trees. The entire area was subjected to a 100% Pedestrian Survey. The subsurface was examined by digging shovel probes, and no cultural materials were observed. Soils in this area consist of yellow-orange clay with sandstone fragments. There was no alluvial deposition.

Area 14

This area is depicted on the Blanton 7.5' quadrangle. This 1500-foot segment is planned for replacement of an existing 1.5" water line with a 6" water line. It is on the east side of County Road 1361 that traverses and high hill overlooking Aquilla Creek 1.15 kilometers to the west. At the time of this survey, the area was covered with grasses and visibility was good. The soil consisted of orange sand over orange clay. The entire area was subjected to a 100% Pedestrian Survey, and two shovel tests were excavated to a maximum depth of 40 cm. No cultural materials were observed.

Area 15

This area is depicted on the Itasca 7.5' quadrangle. This 8700-foot segment is planned for replacement of an existing 1.5" water line with a 6" water line. It is on the south side of Farm-to-Market Road 934. This area crosses a small tributary of Hackberry Creek. At the time of this survey the area was in pasture with good surface visibility. The entire area was subjected to a 100% Pedestrian Survey. The subsurface was investigated by shovel tests and probes. Five shovel tests were excavated to a maximum depth of 30 cm, and no cultural materials were observed. Soils in this area consisted of dark gray prairie clay with no alluvial deposition.

Area 16

This area is depicted on the Blanton and Covington 7.5' quadrangles. This 21,500-foot segment is planned for replacement of an existing 1.5" water line with a 6" line. It is on the west side of Farm-to-Market Road 3049 and the north side of County Road 1143. The only stream crossings are three unnamed tributaries of Rock Creek. This is an area not likely to contain a prehistoric site; therefore, no shovel tests were excavated. The surface was visually inspected, and no evidence of historic utilization was observed.

Area 17

This area is depicted on the Covington 7.5' quadrangle. This 5000-foot segment is planned for replacement of an existing 1.5" water line with a 6" line. It is on the north side of State Highway 67. This area crosses a tributary of Aquilla Creek. At the time of this survey it was in pasture with woods along the creek. The entire area was subjected to a 100% Pedestrian Survey and five shovel tests excavated to a maximum depth of 30 cm. In addition, the area was probed with a shovel. The soils consist of a clay loam over clay with no alluvial deposition. No cultural materials were observed.

Area 18

This area is depicted on the Covington 7.5' quadrangle. This 8000-foot segment is planned for replacement of an existing 1.5" water line with a 6' line. It is on the west side of Farm-to-Market Road 2488. The only stream crossing is an unnamed tributary of Gourd Neck Branch. This is an area not likely to contain a prehistoric site; therefore, no shovel tests were excavated. The surface was visually inspected, and no evidence of historic utilization was observed.

Area 19

This area is depicted on the Itasca 7.5' quadrangle. This 4000-foot segment is planned for replacement of existing 1.5" and 6" water lines with an 8" line. The new line will be placed approximately 4-5 feet from the existing line on private property within an existing easement of 15 feet. It is on the east side of State Highway 171. There are no creek crossings. This is an area not likely to contain a prehistoric site; therefore, no shovel tests were excavated. The surface was visually inspected, and no evidence of historic utilization was observed.

Area 20

This area is depicted on the Hillsboro West and Itasca 7.5' quadrangles. This 21,000-foot segment is planned for replacement of existing 1.5" and 3" water lines with an 8" line. The new line will be placed approximately 4-5 feet from the existing line on private property within an existing easement of 15 feet It is on the west side of County road 1458. The only stream crossings are Cottonwood Creek and an unnamed tributary of Cottonwood Creek. At the time of this survey the northern segment was in cornfields, and surface visibility was excellent. The creek area was wooded, and the southern segment was between two fences and contained weeds and grasses. The entire area was subjected to a 100% Pedestrian Survey, and five shovel tests were excavated to a maximum depth of 30 cm. Soils in this area consisted of a dark gray prairie clay with no alluvial deposition. No cultural materials were observed.

RESULTS AND CONCLUSIONS

The site records at TARL indicated an absence of archaeological sites within the path of the water line as currently proposed or the one-acre site of the wastewater treatment plant. No prehistoric sites were found as a result of this survey. The authors attribute this to a lack of chert in the areas surveyed, shallow soils on the uplands and terraces, and a paucity of major stream crossings. The predominant vegetation throughout the project area at the time of this survey consisted of pasture, cornfields, grasses, and woods. Two cemeteries were found to be near the path of the water line; however, they are on the opposite side of the highway from the proposed water line. These are Jawbone Cemetery in Area 11 and the Blanton Cemetery in Area 4.

RECOMMENDATIONS

The water line as currently proposed will pass near two cemeteries. It is recommended that all construction be restricted to the opposite side of the highway. Should the water line be changed to the same side of the highway as either or both of these cemeteries, it is recommended that the area be scraped under the supervision of a professional archaeologist to ensure that no unmarked graves are disturbed. If construction of the water line along the highway opposite either or both of these cemeteries uncovers unmarked graves, all work must stop until the Texas Historical Commission can evaluate the situation.

Since no archaeological sites were found within the path of the water line, it is recommended that the Woodrow-Osceola WSC be allowed to proceed with construction as planned. If a prehistoric archaeological site is found during construction of the water line all work must stop in the area of the find until the Texas Historical Commission can assess the situation. If the Area of Potential Affect changes to include construction of the water line in areas not surveyed during this project, the Texas Historical Commission must be notified, as further survey may be required.

This project was conducted following the Minimum Survey Standards as defined by the Texas Historical Commission, Archeology Division.

REFERENCES CITED

Arnn John W., and Frances E. Gadus

1999 Archeological Survey and Geomorphological Assessment of a 31-Mile Pipeline route, Aquilla Lake to the City of Cleburne, Hill and Johnson Counties, Texas. Prewitt and Associates, Inc. Technical Report Number 42.

Biesaart, Lynne A., Wayne R. Roberson, and Lisa Clinton Spotts

1985 *Prehistoric Archeological Sites in Texas: A Statistical Overview.* Office of the State Archeologist, Special Report 28. Texas Historical Commission.

Brooks, Charles A.

1978 *Soil Survey of Hill County, Texas.* United States Department of Agriculture, Soil Conservation Service in cooperation with the Texas Agricultural Experiment Station.

Brown, David O.

1987 *Archeology at Aquilla Lake: 1978-1982 Investigations.* (3 volumes) Texas Archeological Survey, Research Report 81, The University of Texas at Austin.

Flook, Jerry M.

1972 Aquilla Creek Botanical Survey. In The Natural and Cultural Environmental Resources of the Aquilla Creek Watershed , Hill County, Texas, assembled by S. Alan Skinner, pp. 157-174. Archaeology Research Program (Institute for the Study of Earth and Man), Southern Methodist University, Research Report 17.

Lynott, Mark J., and Duane E. Peter

1977 *1975 Archaeological Investigations of Aquilla Lake, Texas.* Archaeology Research Program, Southern Methodist University, Research Report 100.

Ritchie, Ronald, and Bob H. Slaughter

1972 Geological Reconnaissance of the Aquilla Creek Reservoir Basin. . In The Natural and Cultural Environmental Resources of the Aquilla Creek Watershed,, Hill County, Texas, assembled by S. Alan Skinner, pp. 148-156. Archaeology Research Program (Institute for the Study of Earth and Man), Southern Methodist University, Research Report 17.

Skinner, S. Alan
1972 *The Natural and Cultural Environmental Resources of the Aquilla Creek Watershed, Hill County, Texas.* Archaeology Research Program (Institute for the Study of Earth and Man), Southern Methodist University, Research Report 17.

Skinner, S. Alan
1975 An Archaeological Survey of Pats of the Aquilla-Hackberry Creek Watershed, Hill County, Texas. Archaeology Research Program, Southern Methodist University, Research Report 61.

Skinner, S. Alan, Chester Shaw, Kate Huckabay, and Mary L. Bartsch
1978 *An Evaluation of Archaeological Resources at Aquilla Lake.* Archaeology Research Program, Southern Methodist University, Research Report 117.

Skinner, S. Alan, Toni S. Turner, Daniel E. McGregor, and James H. Rickards
1979 *1979 Prehistoric Settlement at Aquilla Lake.* Archaeology Research Program, Southern Methodist University, Research Report 119.

Ubelaker, John E., and N. Max Hall
1972 Zoological Resources of the Aquilla Creek Watershed. In The Natural and Environmental Resources of the Aquilla Creek Watershed, Hill County, Texas, assembled by S. Alan Skinner, pp. 175-182. Archaeology Research Program (Institute for the Study of Earth and Man), Southern Methodist University, Research Report 17.

APPENDIX I

SUGGESTED READINGS

Arnn John W., and Frances e. Gadus
1999 *Archeological Survey and Geomorphological Assessment of a 31-Mile Pipeline route, Aquilla Lake to the City of Cleburne, Hill and Johnson Counties, Texas.* Prewitt and Associates, Inc. Technical Report Number 42.

Bailey, Ellis
1966 *A History of Hill County, Texas: 1838-1965.* Texian Press.

Bryan, Frank
1937 A Preliminary Report on the Archeology of Western Navarro County and Some Campsites in Hill and McLennan Counties. *Central Texas Archaeologist* 3:70-79.

Collins, O, F, E. Smeins, and D. H. Riskind
1975 *Plant Communities of the Blackland Prairie of Texas.* The University of North Dakota Press. Grand Forks.

Jelks, Edward B.
1962 The Kyle Site, A Stratified Central Texas Aspect Site in Hill County, Texas. The University of Texas, Department of Anthropology, Archaeology Series Number 5.

Kirkpatrick, A. Y.
1909 The Early Settlers Life in Texas and the Organization of Hill County. Hillsboro, Texas.

Long, Joseph K., III
1961 Three Central Texas Aspect Sites in Hill County, Texas. *Bulletin of the Texas Archeological Society* 30:223-252.

Nunley, J. Parker
1977 Archeological and Historical Survey of Thirteen Proposed Floodwater Retarding Structures in the Aquilla Creek Watershed, Hill County, Texas and the McLennan Creek Watershed, Carson and Gray Counties, Texas. Unnumbered report prepared for the Soil Conservation Service..

Reese, James V.
1961 A History of Hill County, Texas to 1873. Masters thesis, The University of Texas at Austin.

Skinner, S. Alan, and R. King Harris
1971 The Archeological Resources of Lake Whitney, Texas. A Preliminary Report submitted to the National Park Service.

Skinner, S. Alan, and Joseph Gallagher
1974 *An Evaluation of the Archaeological Resources at Lake Whitney, Texas.* Southern Methodist University, Institute for the Study of Earth and Man, Department of Anthropology, Contributions in Anthropology Number 14.

Stephenson, Robert L.
1970 Archeological Investigations in the Whitney Reservoir Area, Central Texas. *Bulletin of the Texas Archeological Society* 40:37-257.

Story, Dee Ann, and Harry J. Shafer
1965 1964 Excavations at Waco Reservoir, McLennan County, Texas: The Baylor and Britton Sites. Texas Archeological Salvage Project, Miscellaneous Papers Number 6.

Suhm, Dee Ann
1960 A Review of Central Texas Archeology. *Bulletin of the Texas Archeological Society* 29:63-107.

Warren, James E.
1977 An Archeological and Historical Survey of Floodwater Retarding Structure Number 13, Aquilla-Hackberry Creek Watershed, Hill County, Texas. Unnumbered report prepared for the United States Department of Agriculture, Soil Conservation Service. Temple, Texas.

Watt, Frank H.
1953 Pottery Diffusions of the Central Brazos Valley. *Central Texas Archeologist* 6:57-85.

APPENDIX II: RESEARCH DESIGN

Records Check

Brazos Valley Research Associates (BVRA) has contacted the Texas Archeological Research Laboratory (TARL), the state repository for site records, to determine if previously recorded sites are present in the project area. No sites were found to be in the path of the water line or at the site of the deep well, pump station, and elevated storage tank. In addition, a review of relevant archaeological reports will be conducted.

Project Description

The Woodrow-Osceola WSC wants to install water line within rural portions of Hill County, Texas. In addition to the water line, a deep well, pump station, and elevated storage tank are planned. They will be constructed on a one-acre tract. The water line will be placed on private property. However, consideration will be given to use of the highway right-of-way if necessary. The water lines will have a cover of 36” to 42”. The lines will be installed using a backhoe. The diameter of the water line will be between 6” and 8”. The width of the trench will be 24”, and the easement will be 15’. The deep well, pump station, and elevated storage tank will be placed within a one-acre tract.

Survey Methods

The Principal Investigator for this project is William E. Moore, and the Project Archaeologist is Edward P. Baxter. No fieldwork will commence until an Antiquities Permit has been issued for this project. The high probability areas selected for survey were identified after two tasks.

- The Principal Investigator reviewed the topographic maps
- The Principal Investigator drove the entire project area and checked the maps against actual field conditions.

RESEARCH DESIGN - (PAGE TWO)

The survey crew will dig shovel probes to test for soil depth above the Pleistocene clay. Shovel probes differ from shovel tests in that the excavated soil is not screened, and the location of the probes are not typically depicted on the project area map. When sandy soil is encountered, shovel tests will be excavated. These tests will adequately cover the area and will be dug in arbitrary 10 cm levels. All excavated dirt will be passed through ¼ inch hardware cloth. Shovel tests will be dug to the underlying clay subsoil when possible and to depths of about 100 cm in sandy areas when clay is not reached. The size of certain tests may be expanded to allow for deeper investigation if needed in order to examine the depth of the APE. Artifacts found in shovel tests will be collected and analyzed in the laboratory prior to curation or submission to the landowner. When a site is found, an attempt to determine its boundaries through shovel testing and surface inspection will be made, and all diagnostic artifacts observed on the surface will be collected.

The soil survey will be consulted to determine the potential for alluvial clays. When present, backhoe trenches may be necessary to examine the APE in these areas.

All sites found in the project area will be mapped. The site map will depict the shovel tests (positive and negative). GPS plottings will be taken to more accurately plot sites on the proper USGS topographic map. All archaeological sites will be assigned a field number. Later, an official trinomial will be assigned by TARL. Future references to these sites will use the TARL number. The number of shovel tests will meet or exceed that number requested in the Minimum Survey Standards for projects of 200 acres or less.

The pre-survey assessment found no floodplain areas suitable for backhoe trenching. The survey will examine creek crossings that are believed to contain alluvial clay soils, as backhoe trenching in these areas may be necessary.

The field assessment observed no historic sites within the proposed easements. One cemetery is near the project area. The route of the water line will be evaluated in terms of any possible impact on this historic site.

The entire project will be documented through digital photography, a hand-held GPS, forms, and field notes.

RESEARCH DESIGN – PAGE THREE

Artifact Analysis

All significant artifacts will be collected for analysis in the laboratory. They will be described and measured. All artifacts not viewed as containing research potential for future researchers will be discarded following a written document authorizing this action from the Texas Historical Commission, Archeology Division or returned to the landowner if found on private property.

Report Preparation

A report documenting this project will be prepared following the guidelines established by the CTA and THC. The style of this report will generally follow that adopted by *American Antiquity.*

Two copies of the draft report will be submitted to the THC for review. A discussion of the project and recommendations for future work will be included. Following acceptance of this report, 20 copies will be submitted to the THC per the requirements of the Antiquities Permit. No site-specific information will be present in the 17 copies designed for the general public.

APPENDIX III: SHOVEL TEST LOG

Test	Depth	Comments
		Areas 1-3
1	20 cm	Hilltop in high weeds; clay at 20 cm
2	30 cm	Hilltop in high weeds; clay at 30 cm
3	30 cm	Hilltop in high weeds; clay at 30 cm
4	20 cm	Hilltop in high weeds; clay at 20 cm
		Area 5
1	10 cm	Pasture with clay at the surface
2	10 cm	Pasture with clay at the surface
3	10 cm	Pasture; clay and ironstone at the surface
4	10 cm	Pasture; clay and sandstone at the surface
5	10 cm	Pasture; clay and sandstone at the surface
6	10 cm	Pasture; clay and sandstone at the surface
7	10 cm	Pasture; clay and sandstone at the surface
8	10 cm	Pasture; clay and ironstone at the surface
		Area 6A
1	50 cm	Plowed field through clay loam
2	50 cm	Side of ditch; clay loam over clay at 50 cm
3	20 cm	Bottom of ditch; clay at the surface
4	40 cm	Plowed corn field through clay loam
5	40 cm	Side of ditch; clay loam over clay at 40 cm
6	20 cm	Bottom of ditch; clay at the surface
7	120 cm	Profile of creek bank; clay loam over clay at 120 cm
8	40 cm	Pasture near creek; clay loam over clay at 40 cm
9	40 cm	Pasture near creek; clay loam over clay at 40 cm
10	20 cm	Pasture on slope; clay at the surface
11	10 cm	Pasture on slope; clay at the surface
		Area 6B
1	40 cm	Pasture; clay loam over clay
2	40 cm	Pasture; clay loam over clay
3	40 cm	Pasture; clay loam over clay
4	40 cm	Pasture; clay loam over clay
5	30 cm	Pasture; clay loam over clay

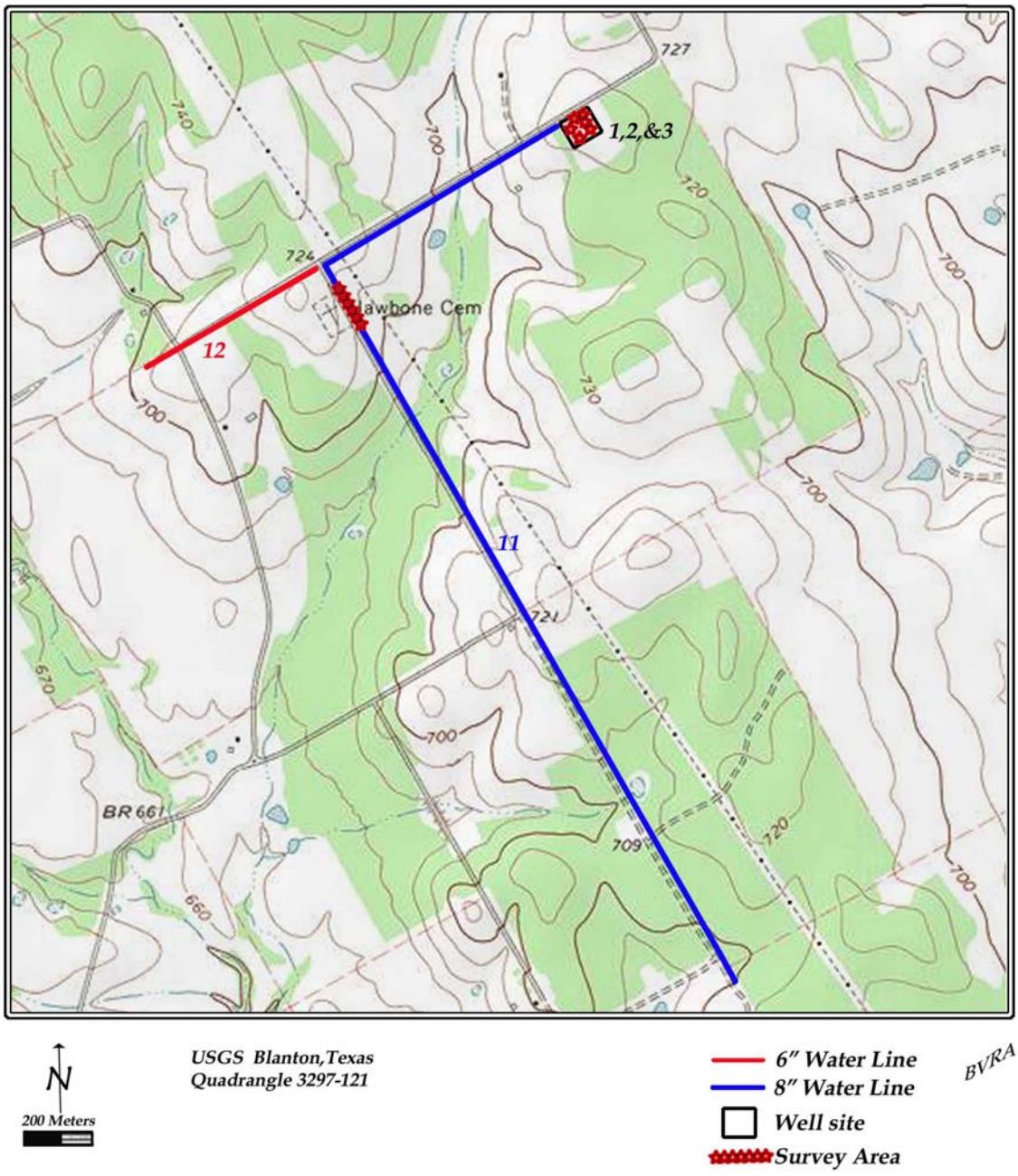
Test	Depth	Comments
		Area 7A
1	10 cm	Rangeland pasture; clay at the surface
2	10 cm	Rangeland pasture; clay at the surface
3	10 cm	Rangeland pasture; clay at the surface
4	10 cm	Rangeland pasture; clay at the surface
5	10 cm	Rangeland pasture; clay at the surface
6	20 cm	Rangeland pasture; clay at the surface
7	20 cm	Rangeland pasture; clay at the surface
		Area 7B
1	10 cm	Rangeland pasture; clay at the surface
2	10 cm	Rangeland pasture; clay at the surface
3	20 cm	Rangeland pasture; clay at the surface
4	20 cm	Rangeland pasture; clay at the surface
		Area 8
1	30 cm	Cornfield; dug through clay
2	30 cm	Cornfield; dug through clay
3	30 cm	Grass; dug through clay
4	30 cm	Cornfield; dug through clay
5	30 cm	Cornfield; dug through clay
		Area 10
1	70 cm	Brush; sand over clay with gravels
2	70 cm	Brush; sand over clay with gravels
3	30 cm	Brush; sand over clay with gravels
4	30 cm	Brush; sand over clay with gravels
5	20 cm	Brush; sand over clay with gravels
6	60 cm	Brush; sand over clay with gravels
7	90 cm	Brush; sand over clay with gravels
8	40 cm	Brush; sand over clay with gravels

Test	Depth	Comments
		Area 13A
1	20 cm	Weeds; clay at the surface
2	20 cm	Weeds; clay at the surface
3	20 cm	Weeds; clay at the surface
4	20 cm	Weeds; clay at the surface
5	20 cm	Weeds; clay at the surface
6	20 cm	Weeds; clay at the surface
7	20 cm	Weeds; clay at the surface
		13B
1	20 cm	Pasture; clay at the surface
2	30 cm	Pasture; clay at the surface
3	20 cm	Woods; clay at the surface
4	20 cm	Woods; clay at the surface
5	20 cm	Pasture; clay at the surface
6	10 cm	Pasture; clay at the surface
7	10 cm	Pasture; clay at the surface
		Area 14
1	30 cm	Disturbed by road and yards; sand over clay
2	30 cm	Disturbed by road and yards; sand over clay
		Area 15
1	30 cm	Pasture; clay at the surface
2	30 cm	Pasture; clay at the surface
3	30 cm	Pasture; clay at the surface
4	30 cm	Pasture; clay at the surface
5	30 cm	Pasture; clay at the surface

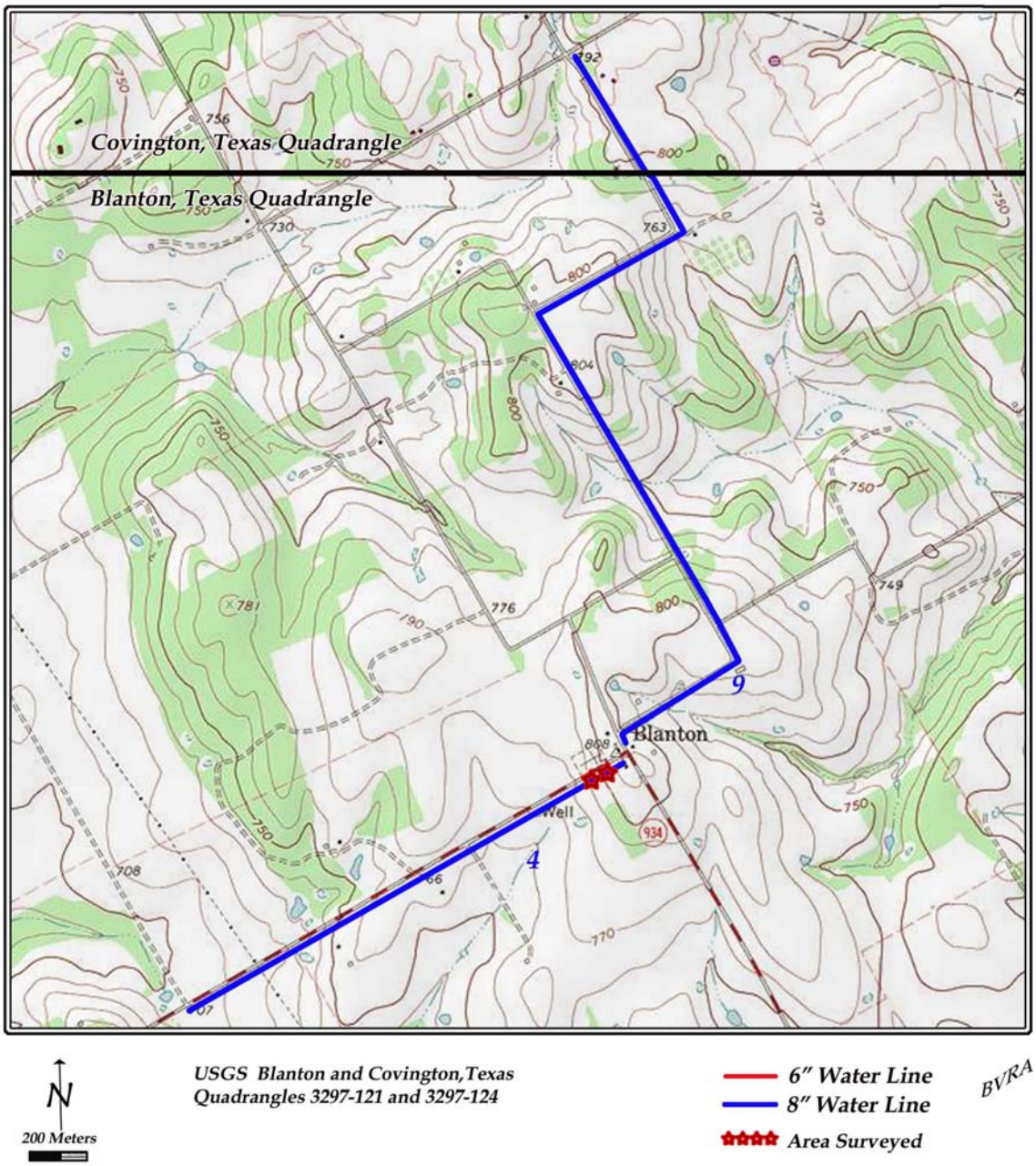
Test	Depth	Comments
		Area 17
1	10 cm	Pasture; clay and ironstone fragments at surface
2	10 cm	Pasture; clay and ironstone fragments at surface
3	20 cm	Pasture; sandy over clay
4	30 cm	Pasture; sandy over clay
5	20 cm	Pasture; sandy over clay
		Area 20
1	30 cm	Cornfield; clay loam over clay
2	30 cm	Cornfield; clay loam over clay
3	30 cm	Cornfield; clay loam over clay
4	40 cm	Grass; sand over clay
5	40 cm	Woods; sand clay loam over clay
6	20 cm	High grass and weeds; clay at the surface
7	20 cm	High grass and weeds; clay at the surface
8	20 cm	High grass and weeds; clay at the surface
9	20 cm	High grass and weeds; clay at the surface

APPENDIX IV

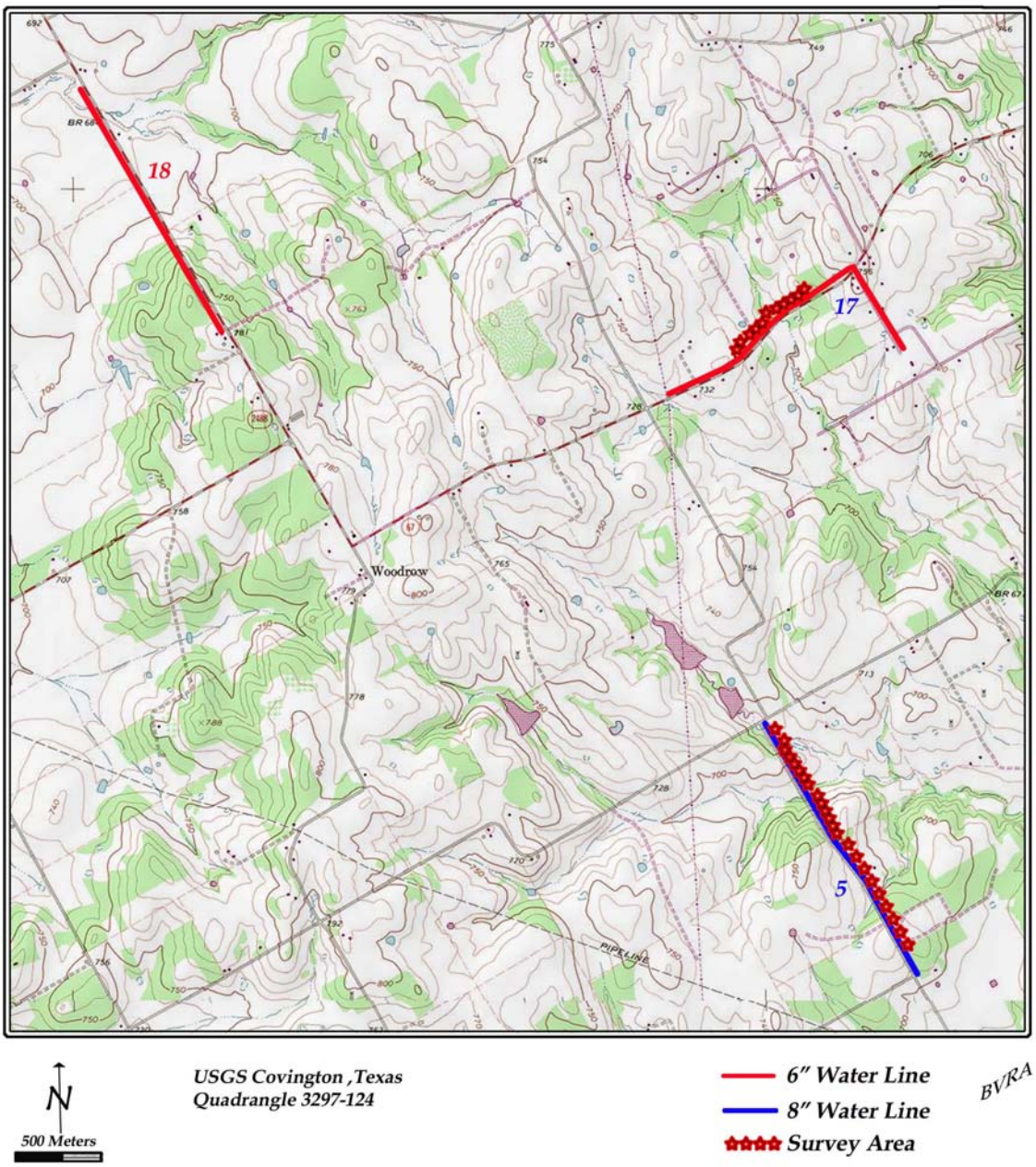
PROJECT AREAS ON TOPOGRAPHIC QUADRANGLES


1,2,&3
Lawhone Cem
12
11
BR 66
N
200 Meters
USGS Blanton,Texas
Quadrangle 3297-121
6" Water Line
8" Water Line
Well site
Survey Area
BVRA

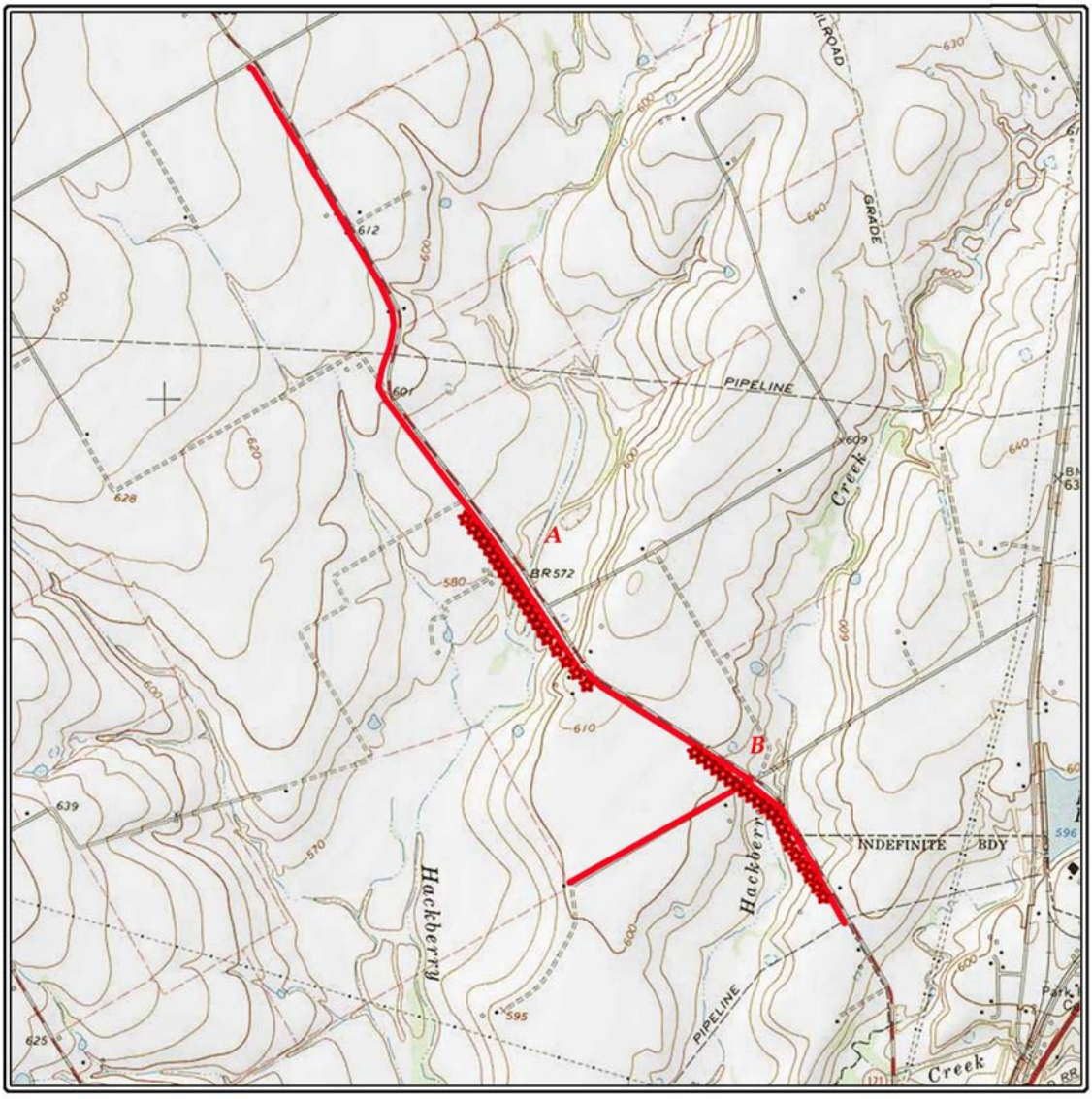
Areas 1-3


Covington, Texas Quadrangle
Blanton, Texas Quadrangle
Blanton
Well
9
4
N
200 Meters
USGS Blanton and Covington, Texas
Quadrangles 3297-121 and 3297-124
6" Water Line
8" Water Line
Area Surveyed
BVRA

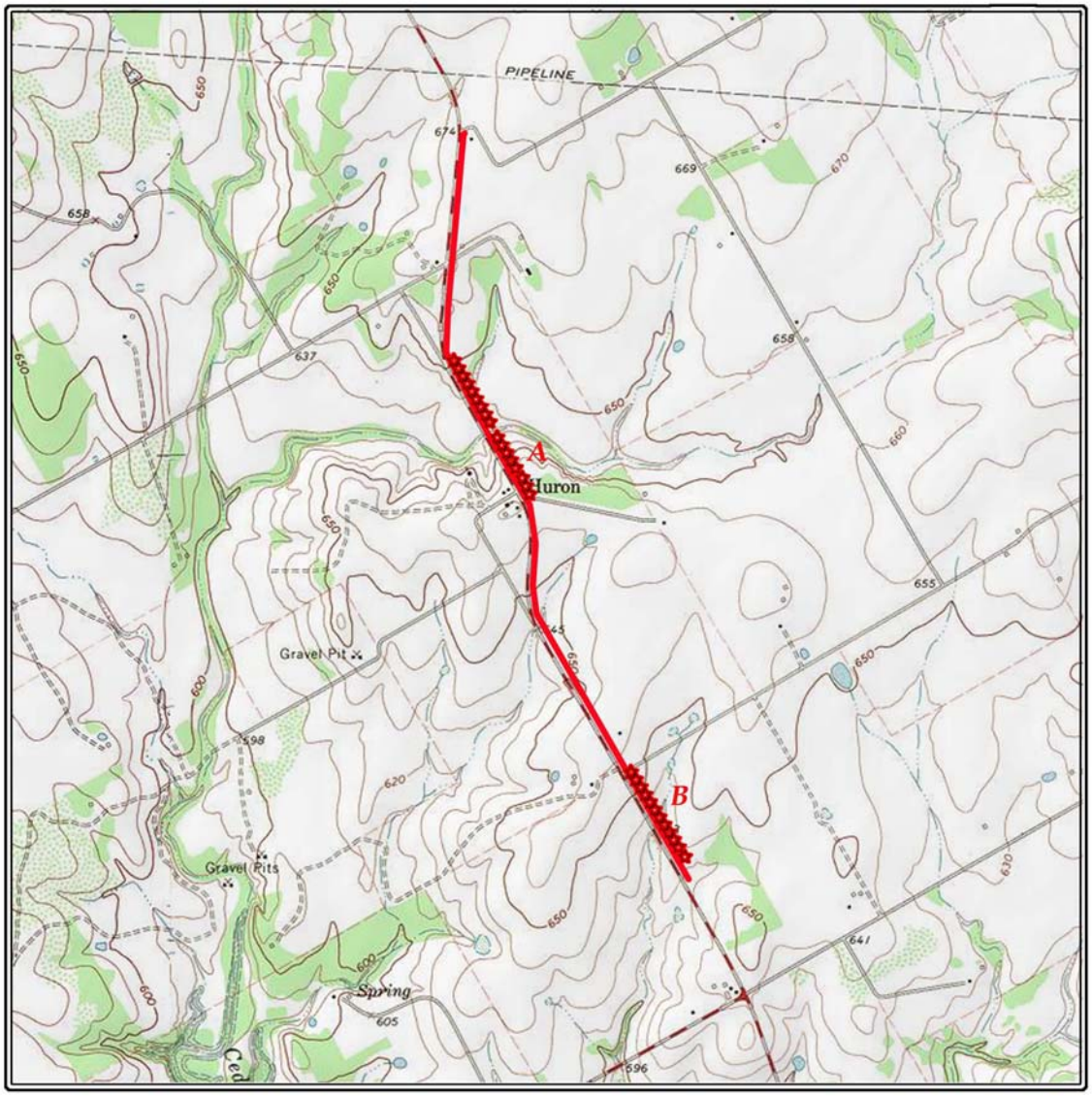
Areas 4 and 9



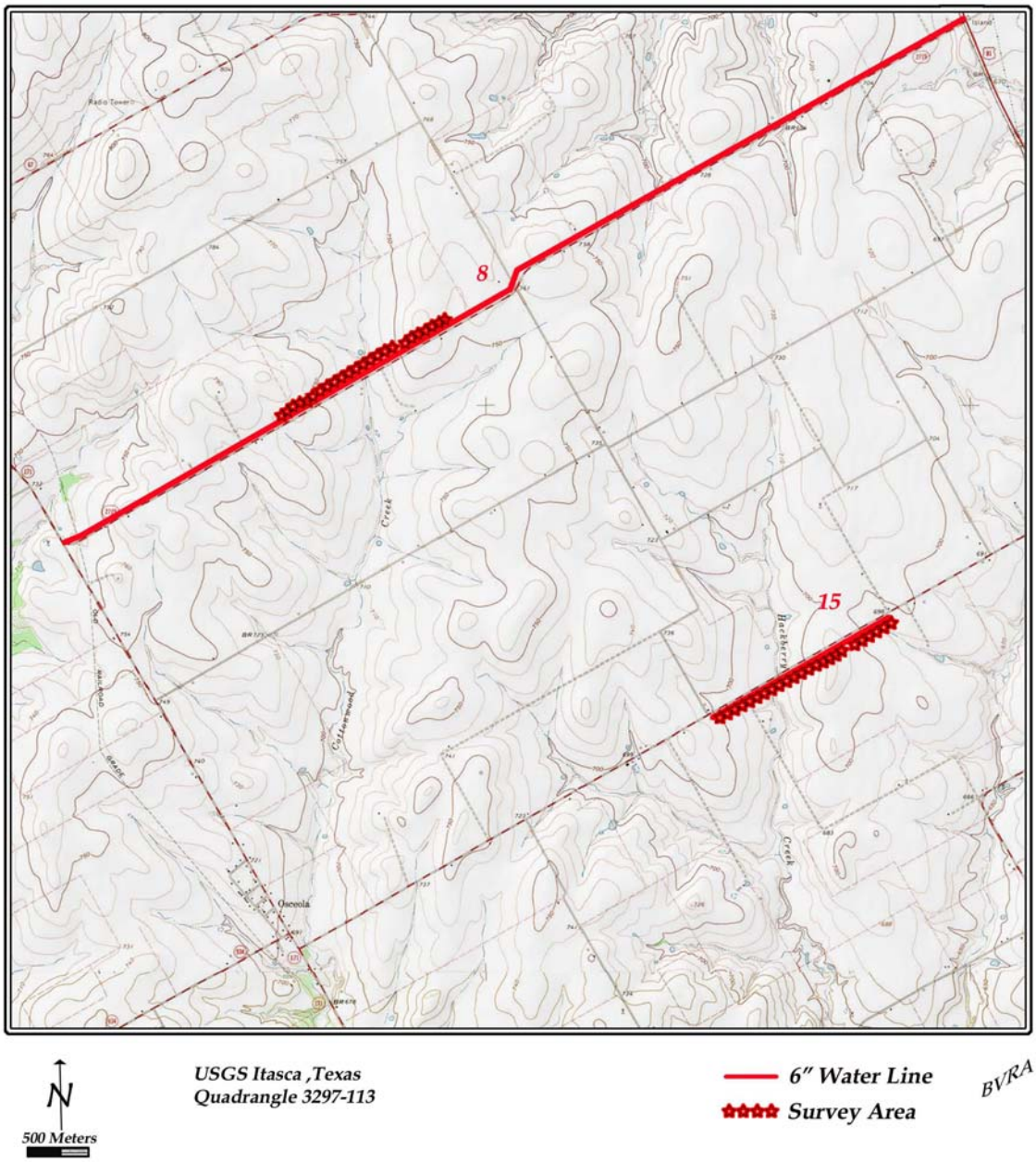
Areas 5, 17, and 18


A
B
BR572
PIPELINE
INDEFINITE BDY
Hackberry
Creek
GRADE
N
200 Meters
USGS Hillsboro West,Texas
Quadrangle 3297-112
6" Water Line
Survey Area
BVRA

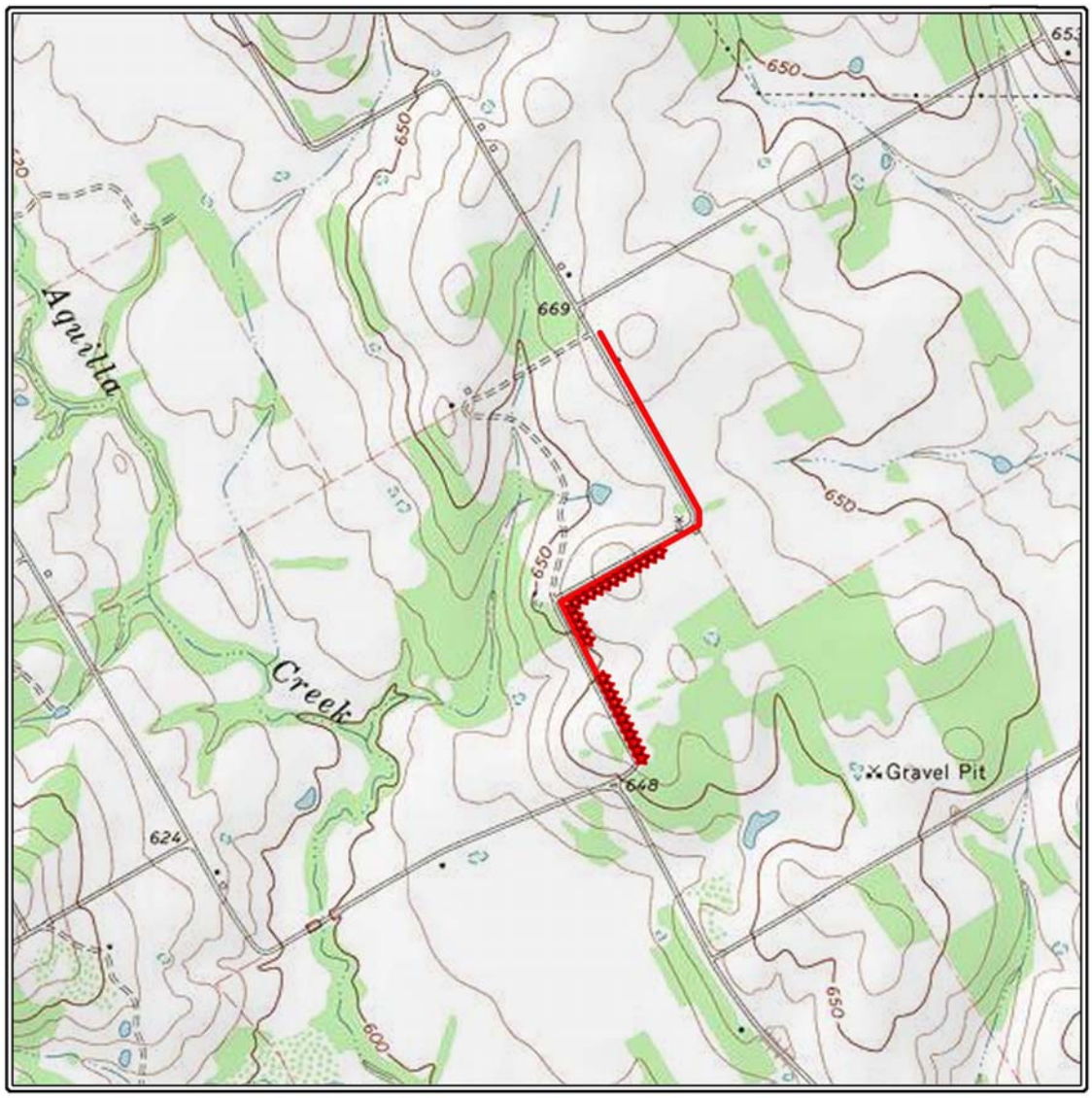
Area 6


PIPELINE
A
Huron
B
Gravel Pit
Gravel Pits
Spring
USGS Blanton,Texas
Quadrangle 3297-121
N
200 Meters
6" Water Line
Survey Area
BVRA

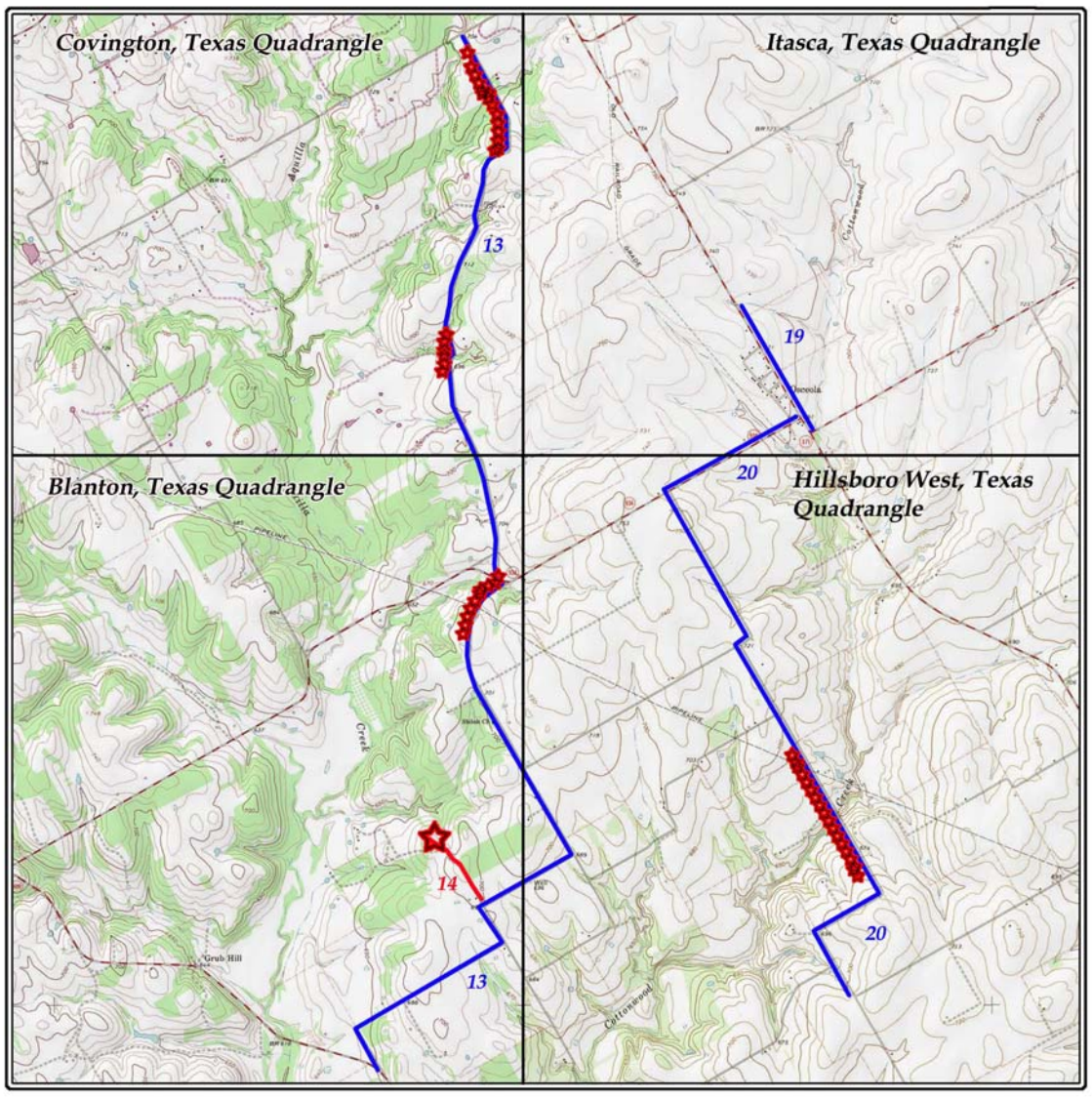
Area 7



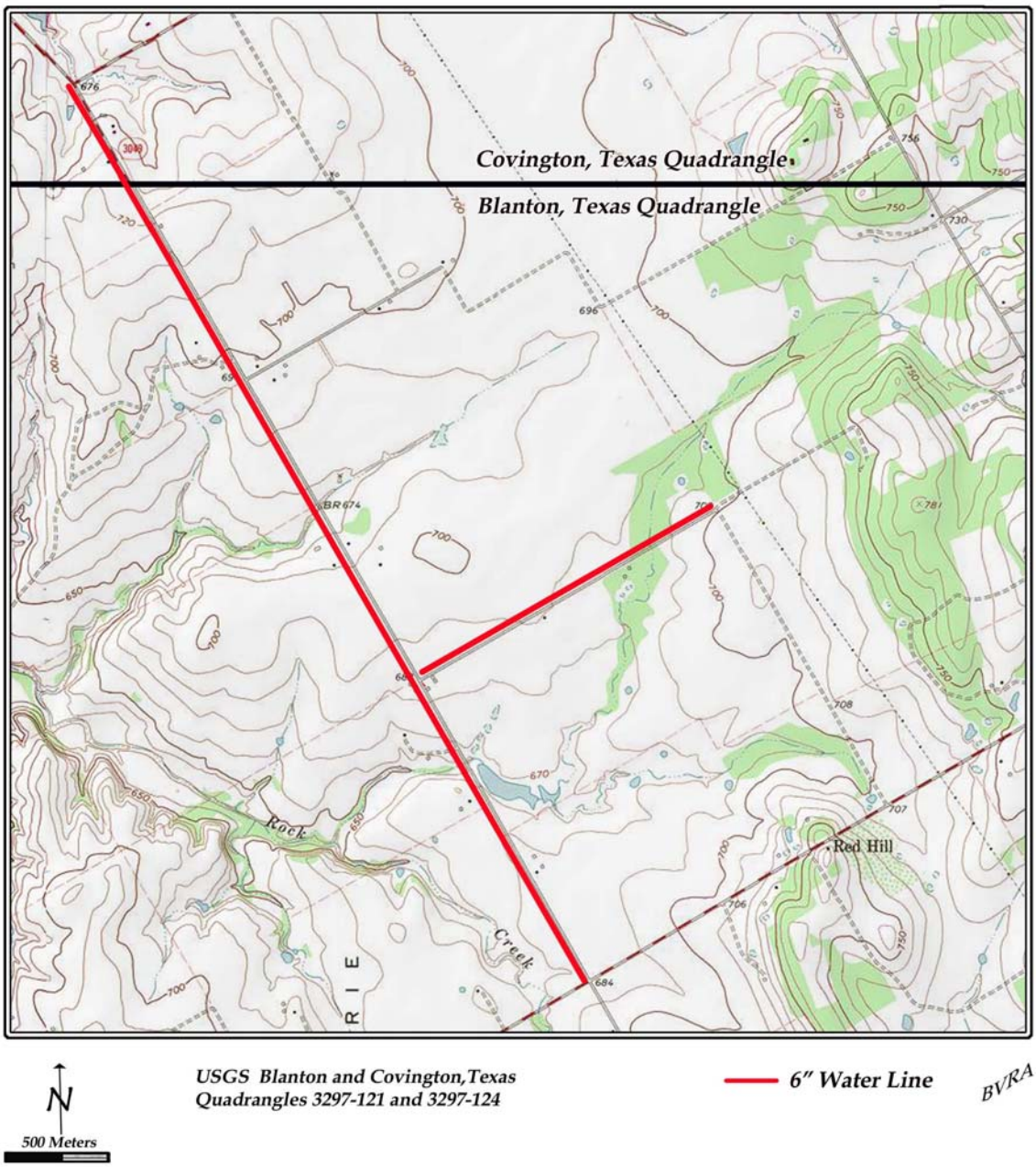
Areas 8 and 15


650
650
669
650
650
Aquilla
Creek
Gravel Pit
648
624
650
600
N
200 Meters
USGS Blanton, Texas
Quadrangle 3297-121
6" Water Line
Survey Area
BVRA

Area 10



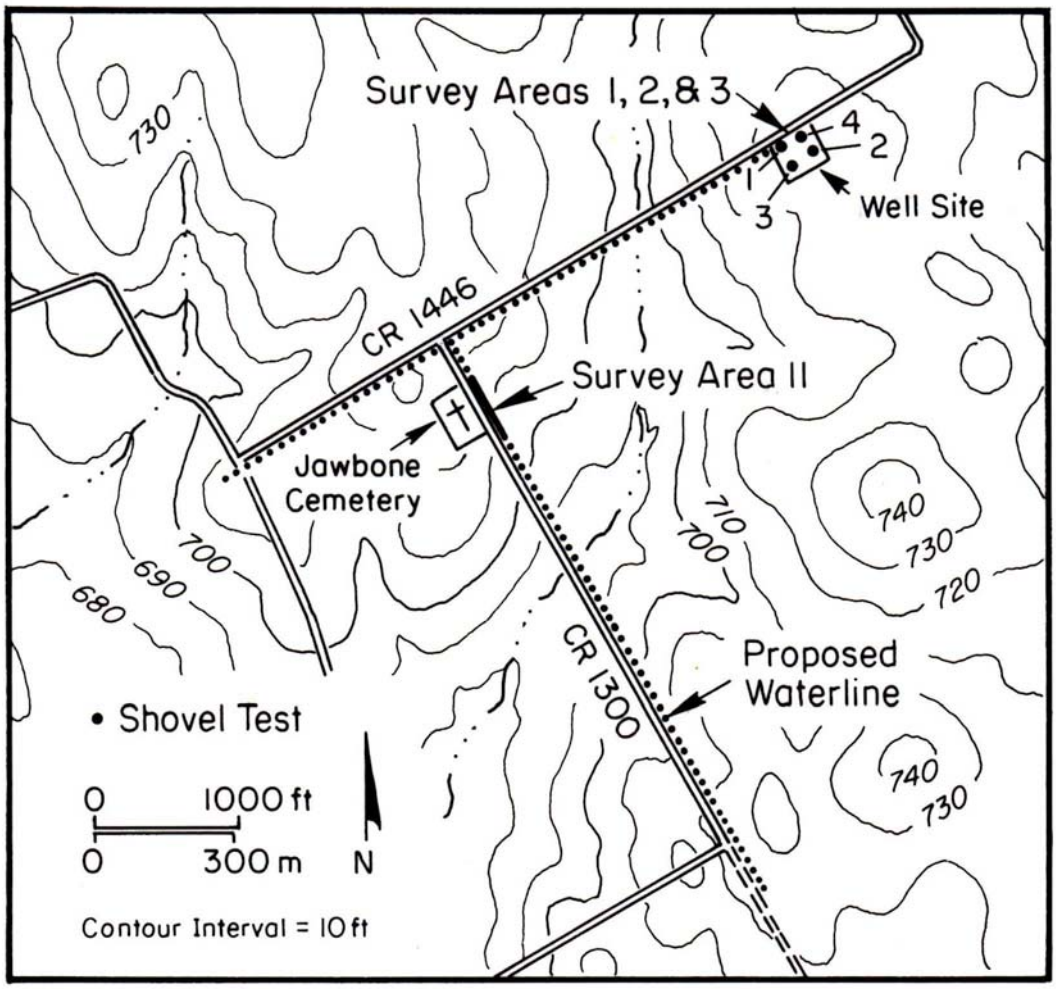
Areas 13, 14, 19, and 20


Covington, Texas Quadrangle
Blanton, Texas Quadrangle
Red Hill
Rock
Creek
R I E
N
500 Meters
USGS Blanton and Covington, Texas
Quadrangles 3297-121 and 3297-124
6" Water Line
BVRA

Area 16

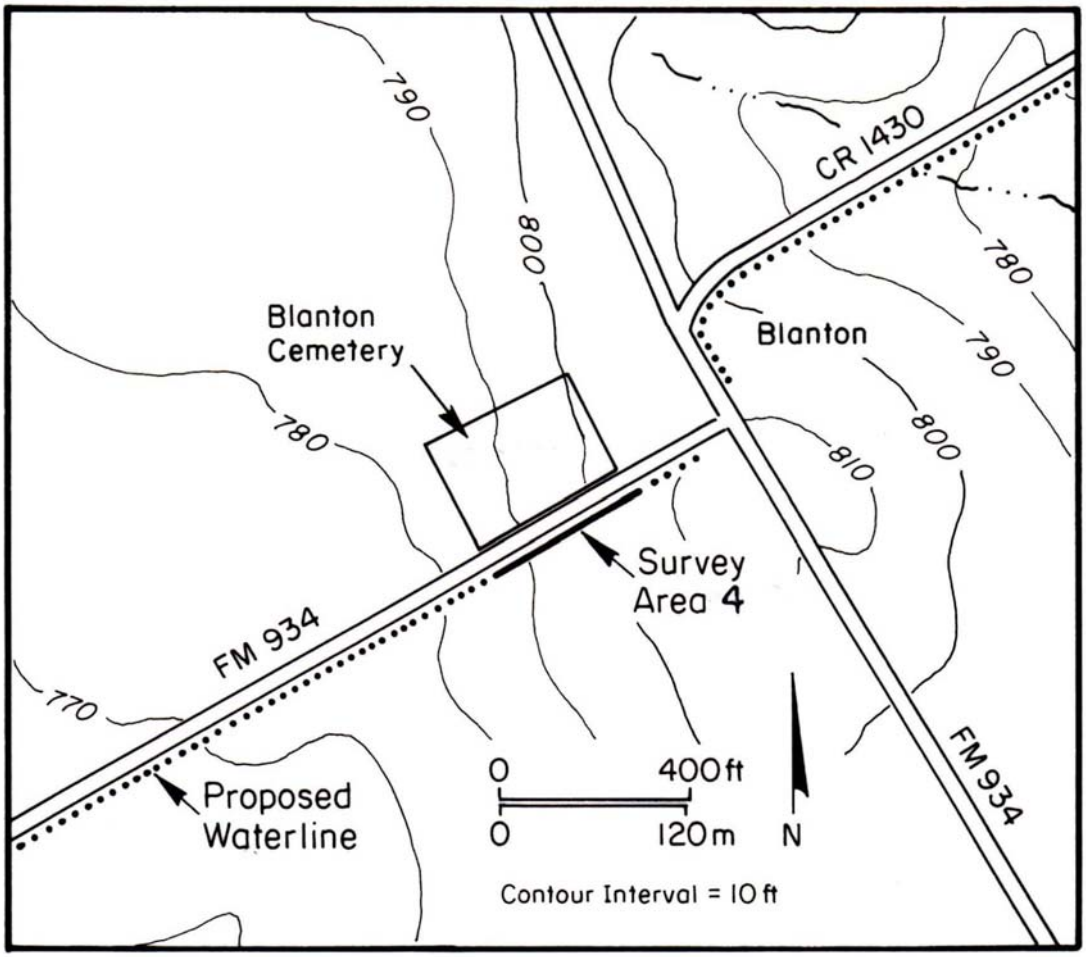
APPENDIX V

SHOVEL TEST LOCATIONS



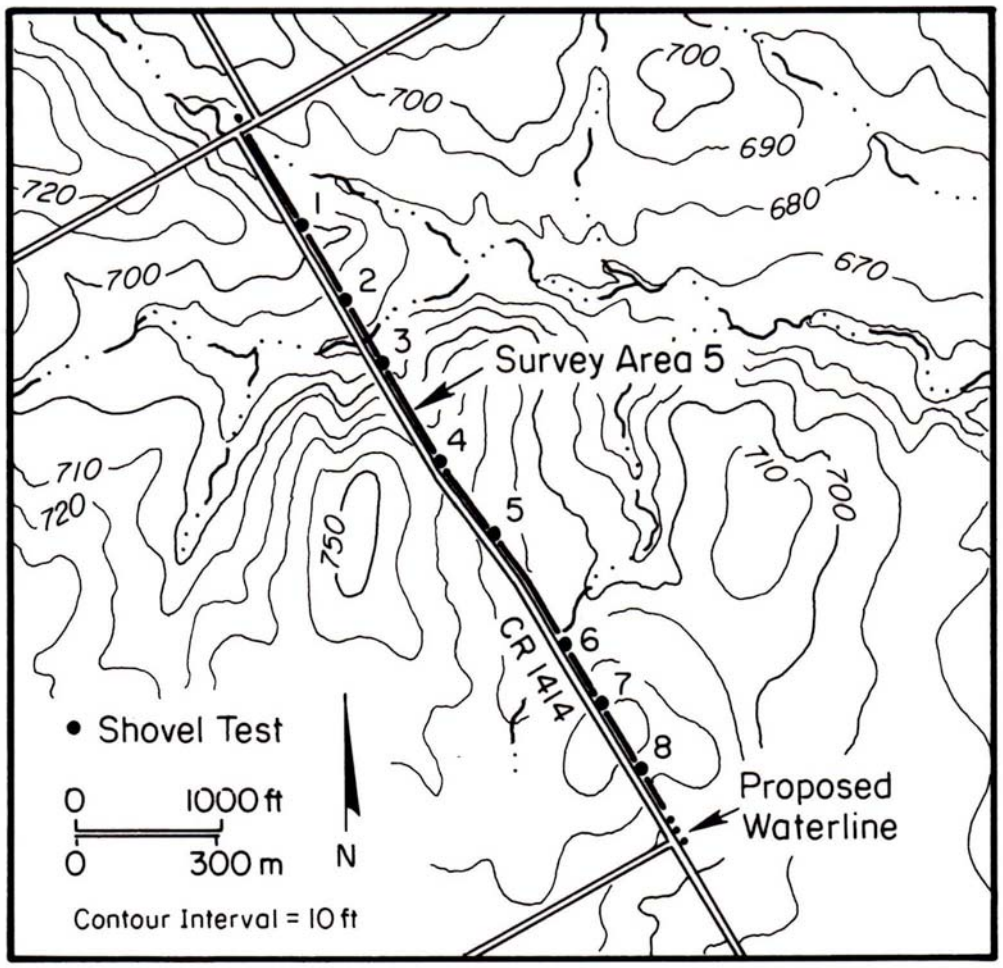
Survey Areas 1-3 and 11

(No shovel tests excavated in vicinity of cemetery)

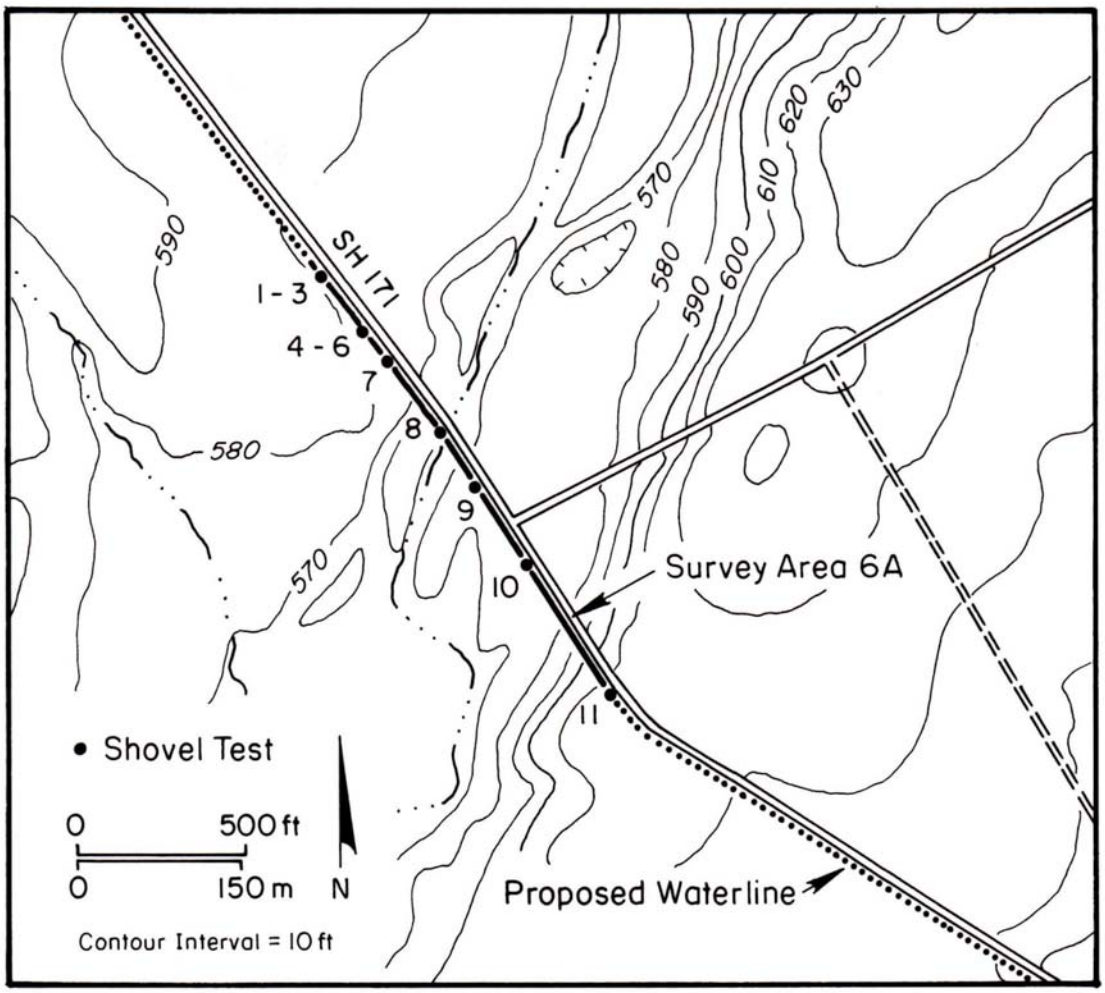


Survey Area 4

(No shovel tests; cemetery outside of project area)



Survey Area 5



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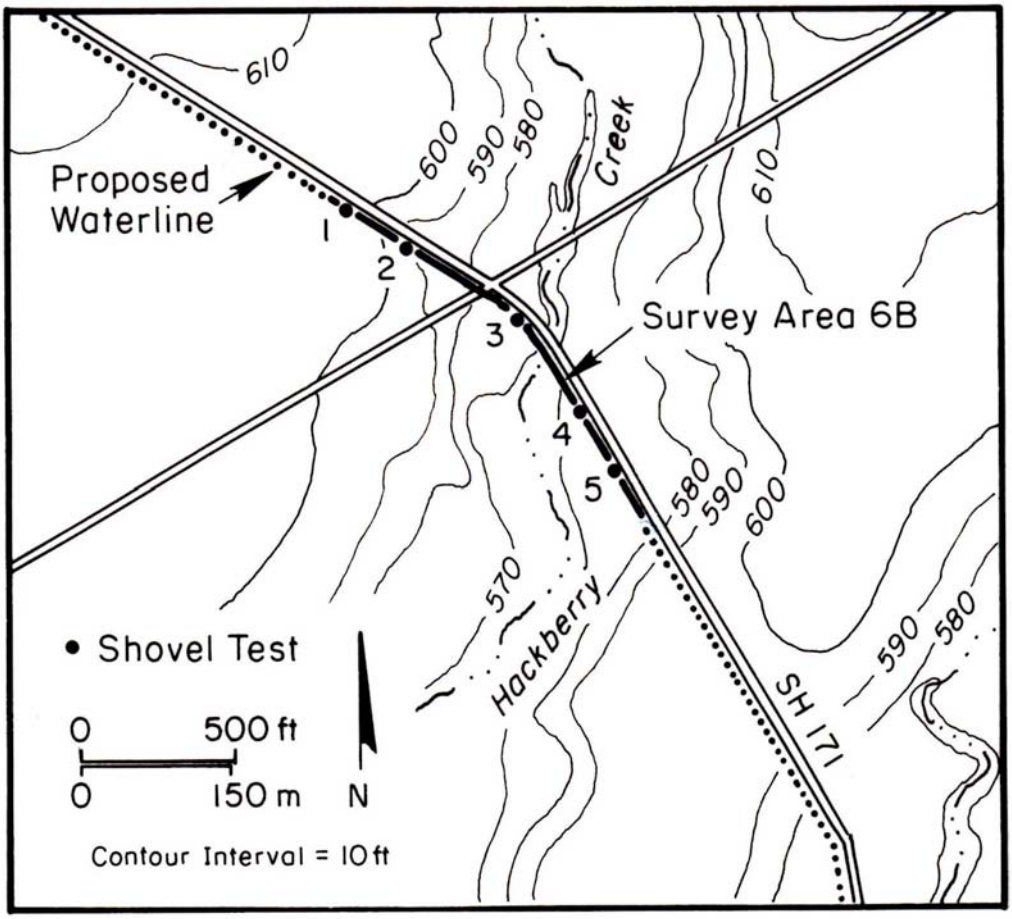

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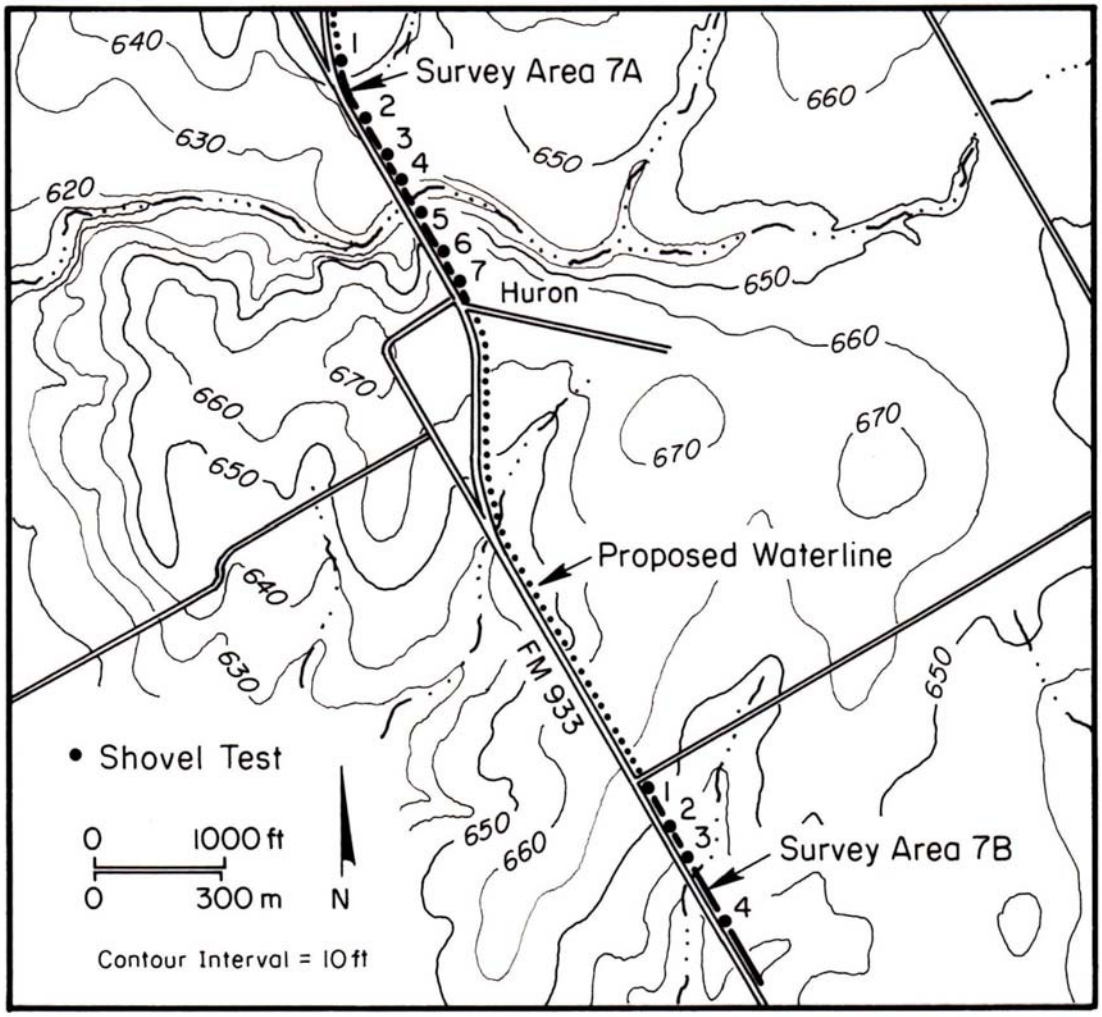
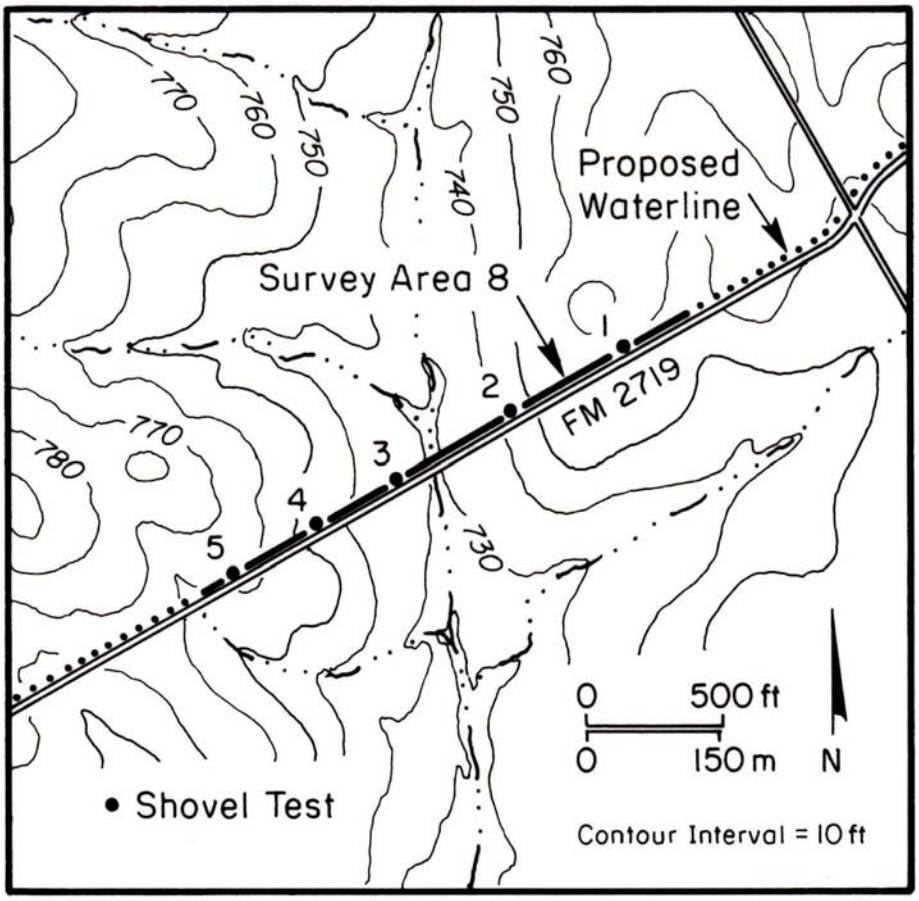


Survey Areas 7a and 7b



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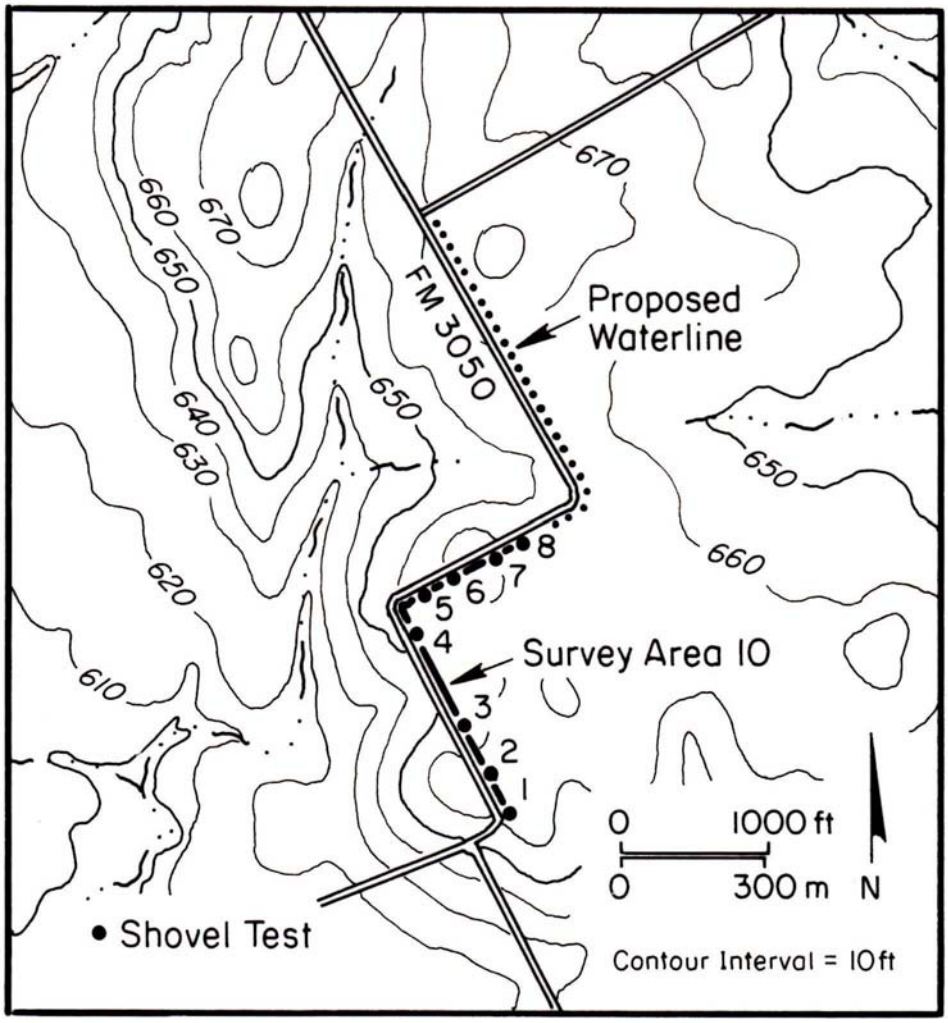

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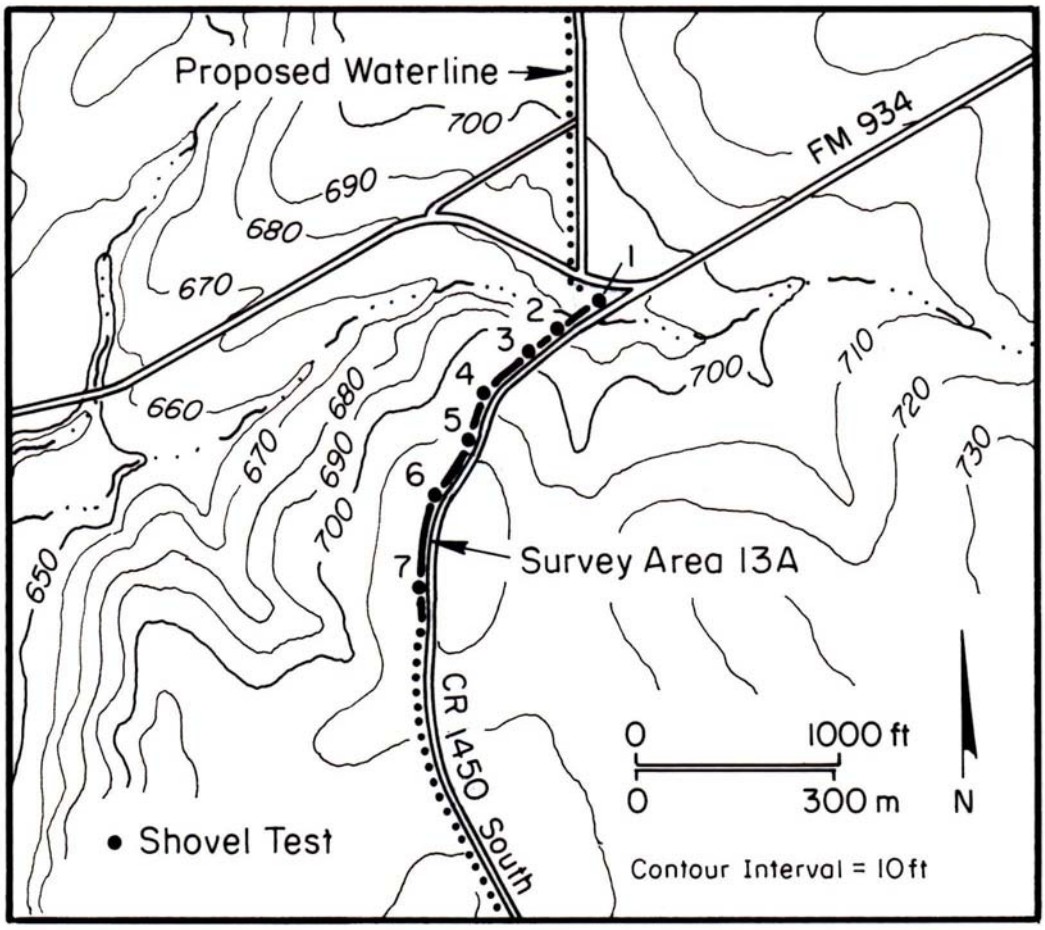
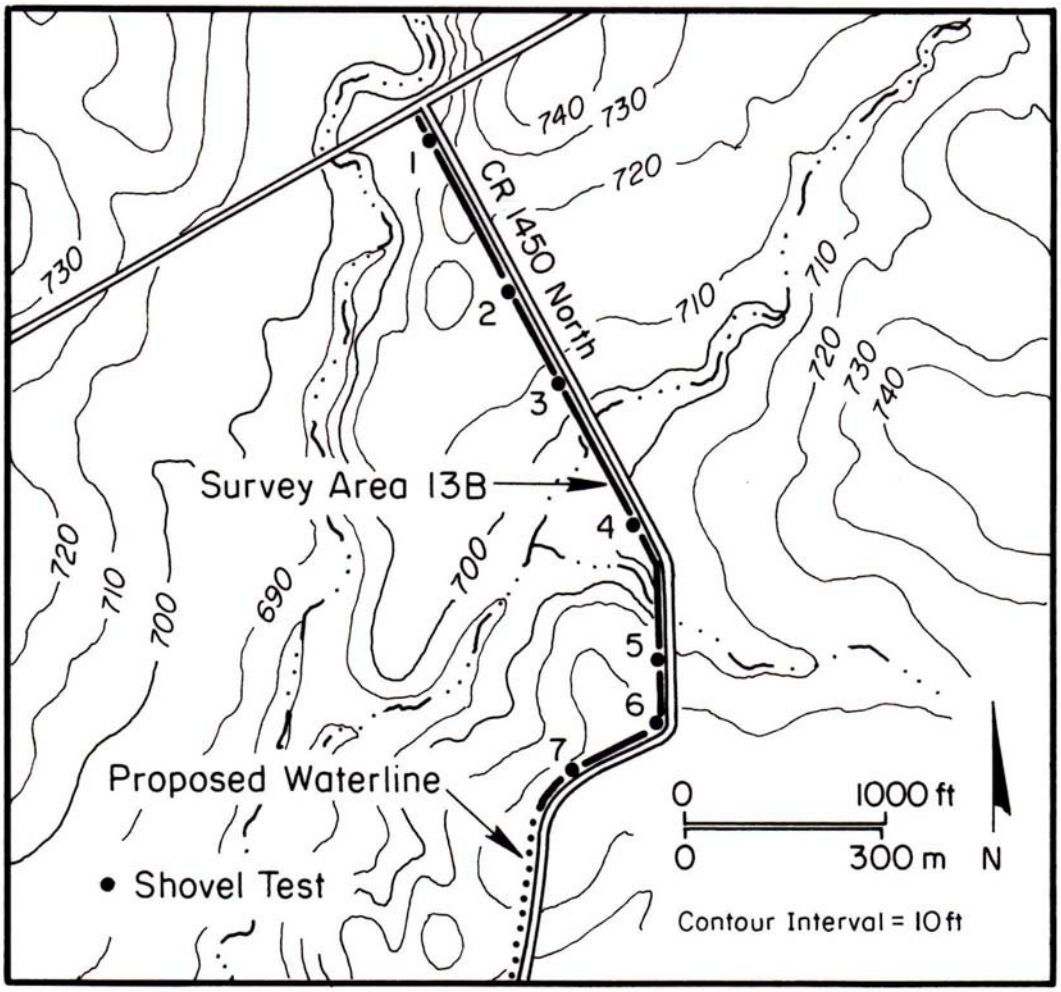
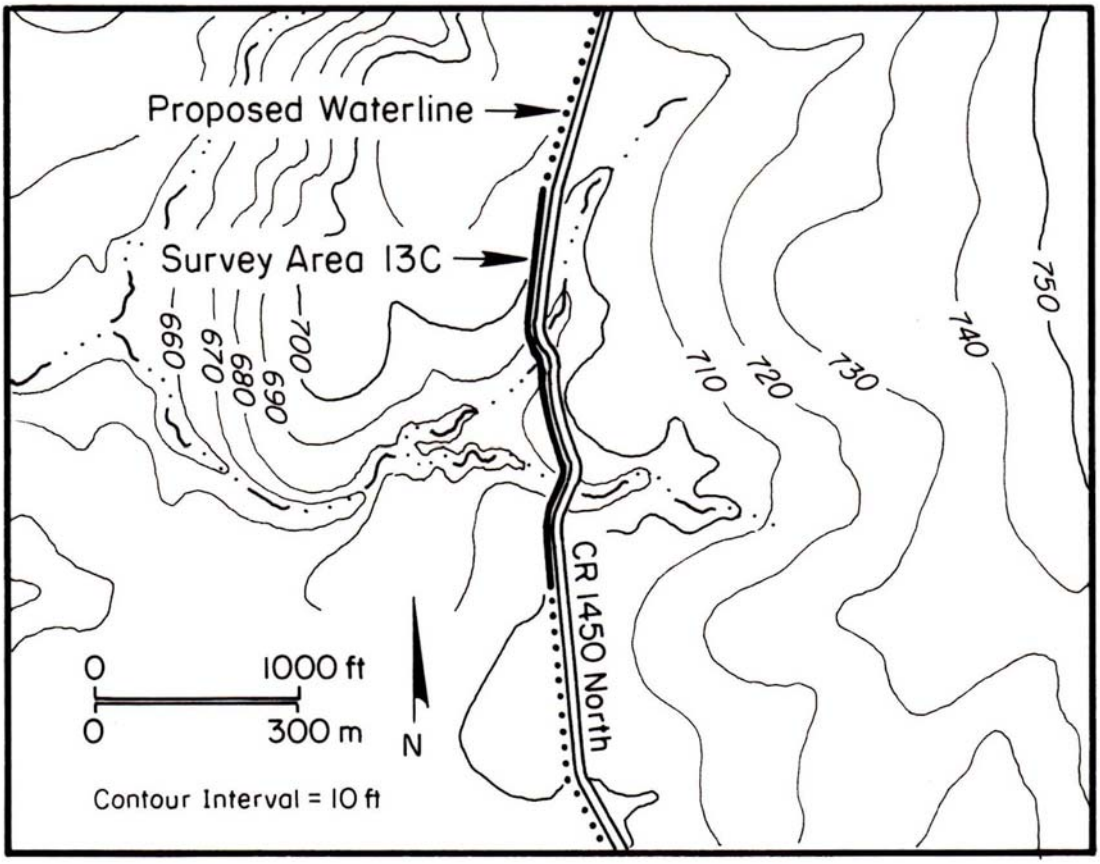


Survey Area 13a

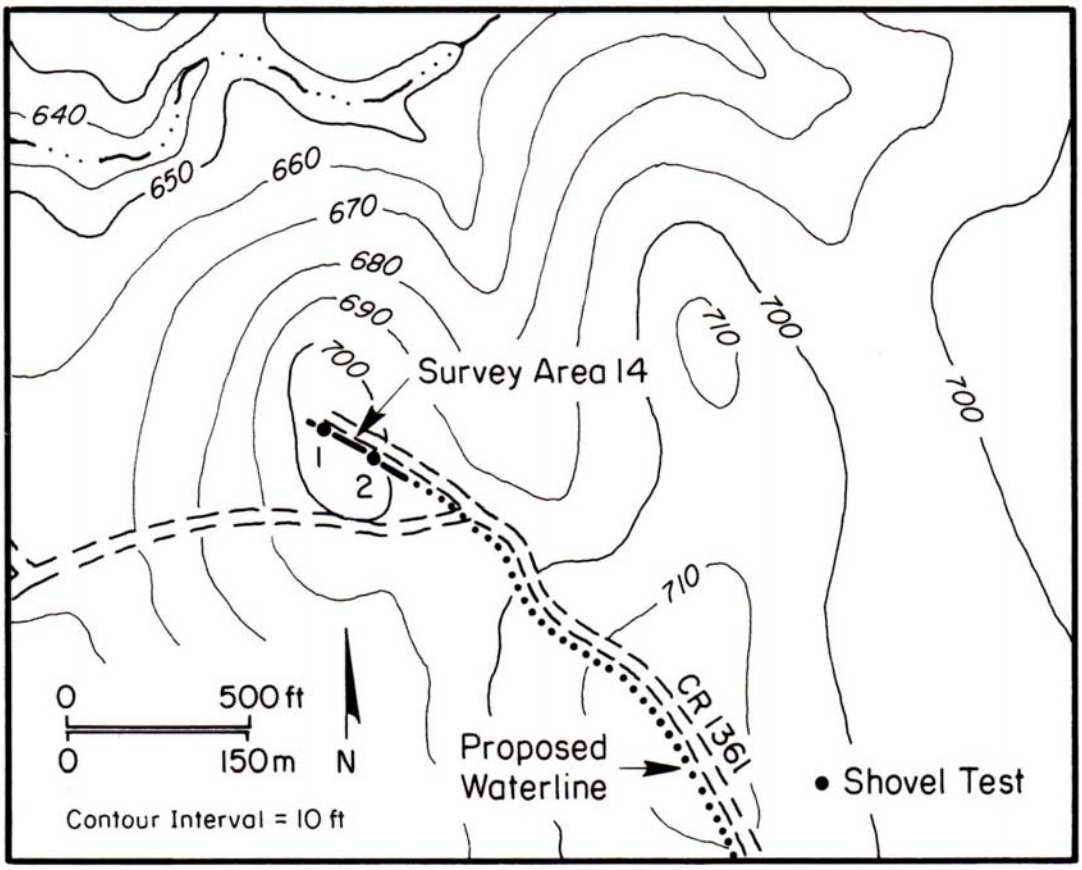


Survey Area 13b



Survey Area 13c

(Shovel probes excavated but not plotted on map)



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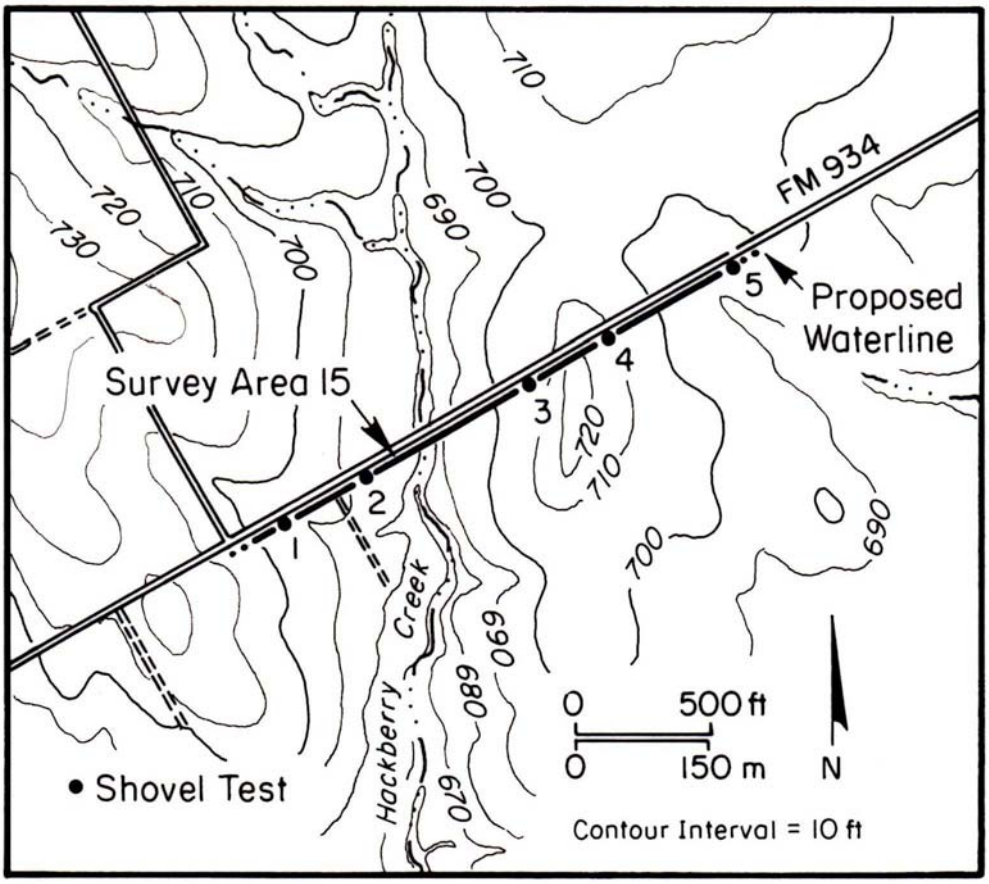

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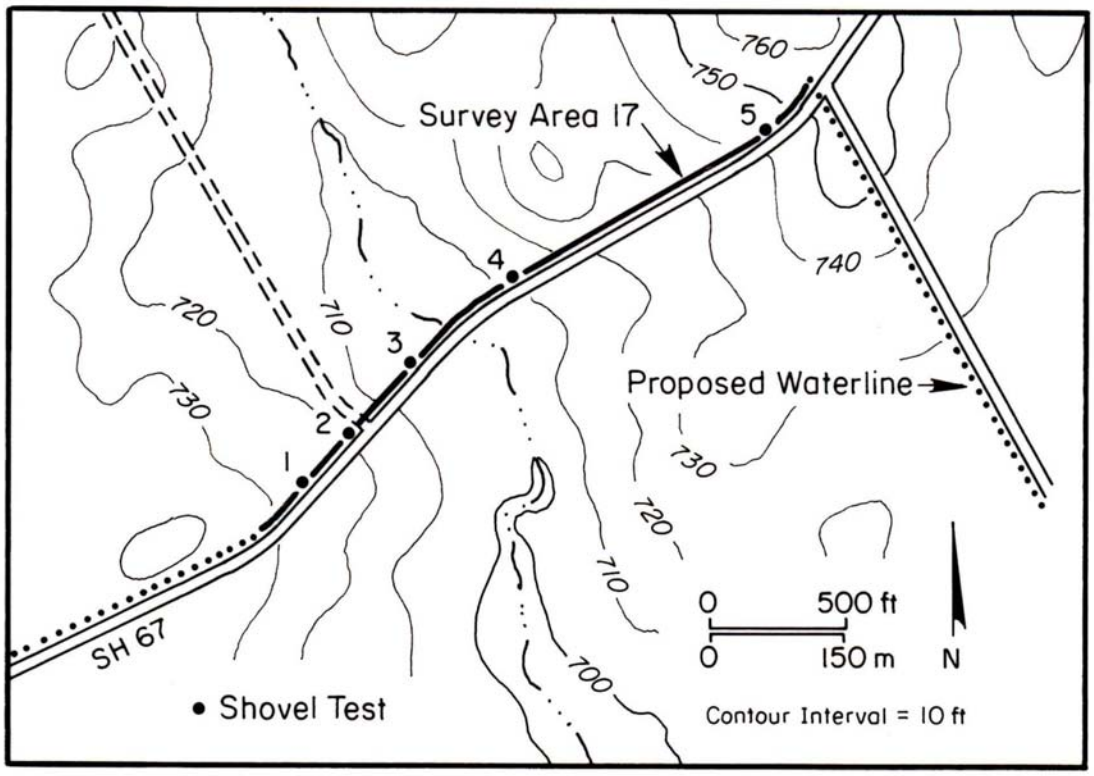

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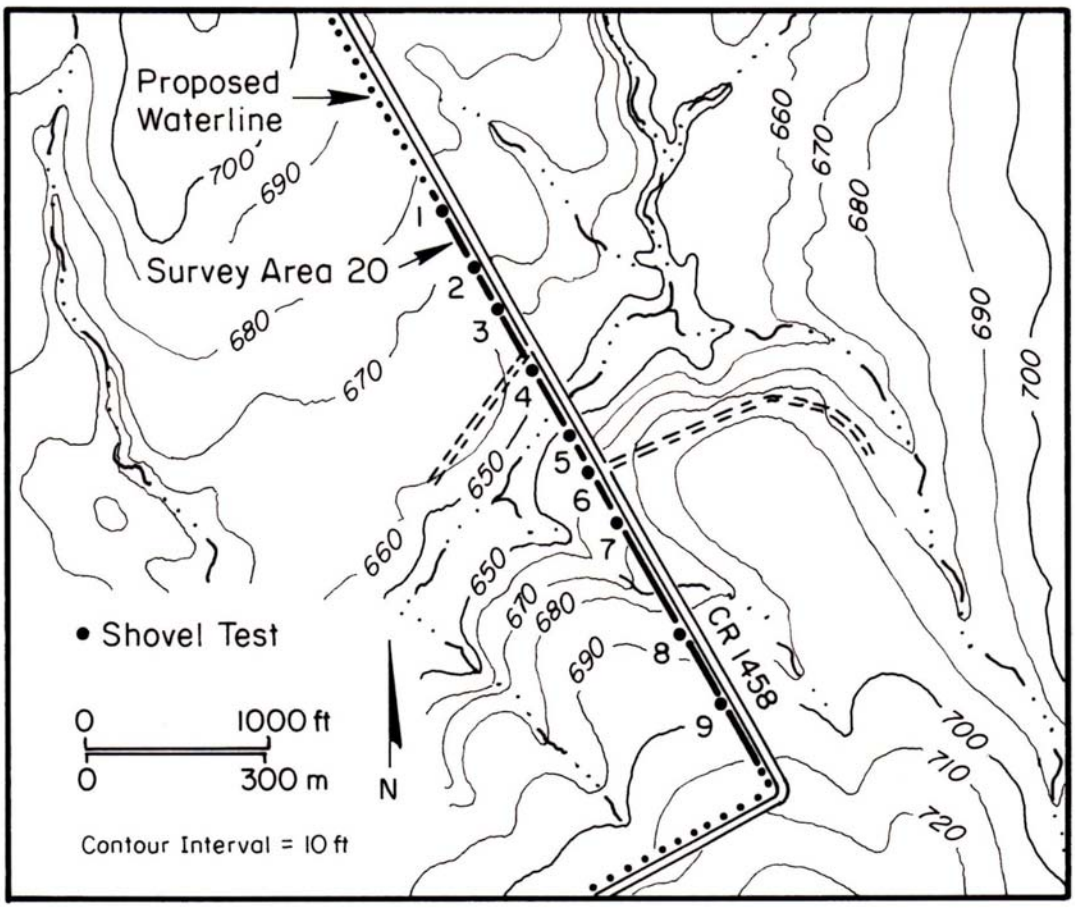

Survey Area 20